



Prepared for

Georgia Power Company
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**2020 ANNUAL GROUNDWATER
MONITORING & CORRECTIVE
ACTION REPORT**

**GEORGIA POWER COMPANY
PLANT HAMMOND ASH POND 3 (AP-3)**

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Project Number GW6581

July 2020

CERTIFICATION STATEMENT

This 2020 Annual Groundwater Monitoring & Corrective Action Report, Georgia Power Company - Plant Hammond – Ash Pond 3 (AP-3) has been prepared in compliance with the United States Environmental Protection Agency coal combustion residual rule [40 Code of Federal Regulations (CFR) 257 Subpart D], specifically 40 CFR § 257.90(e), and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10 by a qualified groundwater scientist or engineer with Geosyntec Consultants.



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July 31, 2020
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LIST OF ACRONYMS

AP	ash pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
CFS	Civil Field Services
cm/sec	centimeters per second
DO	dissolved oxygen
ft	feet
ft/day	feet per day
ft/ft	feet per foot
GA EPD	Georgia Environmental Protection Division
GPC	Georgia Power Company
GWPS	Groundwater Protection Standard
HAR	Hydrogeologic Assessment Report
HDPE	high density polyethylene
K_h	horizontal hydraulic conductivity
mg/L	milligram per liter
NELAP	National Environmental Laboratory Accreditation Program
NTU	Nephelometric turbidity units
Pace Analytical	Pace Analytical Services, LLC.
PE	professional engineer
PL	prediction limit
QA/QC	Quality Assurance/Quality Control
SCS	Southern Company Services
SSI	statistically significant increase
s.u.	standard unit
TDS	total dissolved solids
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 (GA EPD) Rules for Solid Waste Management 391-3-4-.10, Geosyntec Consultants (Geosyntec) has prepared this *2020 Annual Groundwater Monitoring & Corrective Action Report* to document groundwater monitoring activities conducted at Georgia Power Company (GPC) Plant Hammond (Site) Ash Pond 3 (AP-3) for the reporting period of August 2019 through July 2020.

Groundwater monitoring and reporting for the CCR unit is performed in accordance with the monitoring requirements of § 257.90 through 257.95 of the Federal CCR rule, and GA EPD Rules for Solid Waste Management 391-3-4-.10(6). To specify groundwater monitoring requirements, GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the USEPA CCR Rule. For ease of reference, the USEPA CCR rules are cited within this report.

AP-3 ceased receiving waste prior to the effective date of the CCR rule promulgated in April 2015. A notification of intent to initiate closure of the inactive CCR surface impoundment was certified on December 7, 2015 and posted to GPC's website. Groundwater monitoring and reporting for AP-3 are being completed in accordance with the alternate schedule in § 257.100(e)(5) of the revised CCR rule (August 5, 2016).

Due to statistically significant increases (SSIs) of Appendix III constituents identified in the *2019 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2019a), GPC initiated an assessment monitoring program for AP-3 in August 2019. Pursuant to § 257.95(b), samples were collected from the compliance monitoring well network in August 2019, within 90 days of initiating the assessment monitoring program. The samples were analyzed for the complete list of Appendix IV constituents. Pursuant to § 257.95(d)(1), the AP-3 compliance wells were resampled semiannually in October 2019 and March 2020. The groundwater samples collected during these events were analyzed for Appendix III constituents and the Appendix IV constituents detected during the August 2019 event. This report includes the results of the initial annual monitoring event conducted in August 2019 and the subsequent semiannual assessment monitoring events conducted in October 2019 and March 2020.

1.1 Site Description and Background

Plant Hammond is located in Floyd County, Georgia, approximately 10 miles west of Rome and 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**). The physical address of the plant is 5963 Alabama Highway, Rome, Georgia, 30165.

Plant Hammond is a four-unit, coal-fired electric generating facility. All four units at Plant Hammond were retired on July 29, 2019 and no longer produce electricity.

AP-3 is a 25-acre former ash pond that was constructed in 1973 and 1974. Ash sluicing and placement operations at AP-3 commenced in June 1977. In the early 1980's, AP-3 was converted into a dry ash disposal area and in the early 1990's the pond stopped receiving CCR materials.

Closure of AP-3 commenced in 2016. As part of closure, AP-3 was dewatered sufficiently to remove the free liquids. The CCR material remaining in AP-3 was graded and a final cover system installed. The final cover was constructed to control, minimize or eliminate, to the maximum extent feasible, the infiltration of liquids into the waste by providing sufficient grades and slopes to promote surface runoff from the unit. The final cover system consists of a 60-mil high density polyethylene (HDPE) liner, geocomposite drainage media, a minimum 18-inch thick protective soil cover, and a 6-inch thick vegetative layer. Final capping of the pond with a low-permeability cover system was completed in the second quarter of 2018.

1.2 Regional Geology & Hydrogeologic Setting

The following section summarizes the geologic and hydrogeologic conditions at AP-3 as described in the *Hydrogeologic Assessment Report Revision 01 – Ash Pond 3* (HAR Rev 01) submitted to GA EPD under separate cover in support of the AP-3 closure permit application (Geosyntec, 2019b)

1.2.1 Regional and Site Geology

The Site is located within the Great Valley District of the Valley and Ridge Physiographic Province (Valley and Ridge) in 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 the Site by Petrologic Solutions,

Inc. under the direction of Golder (Golder, 2018) indicates that AP-3 is underlain by the middle units of the Cambrian age Conasauga Formation, consisting of mostly shaley limestone. Based on review of site-specific subsurface investigations, the bedrock at AP-3 was identified as limestone or shaley limestone. AP-3 is underlain primarily by five lithologic units; (i) fill material, (ii) terrace alluvium, (iii) residuum, (iv) highly weathered/fractured limestone bedrock, and (v) unweathered limestone bedrock.

Based on subsurface investigations the fill is composed of lean clay or gravelly lean clay with sand, sometimes identified by the presence of wood or roots. The terrace alluvium consists of unconsolidated sediments with high sand and gravel content associated with deposition from the Coosa River and Cabin Creek. Residual or native soils have been derived from the in-place weathering of the shaley limestone bedrock. The residuum is generally described as fat clay with typically only trace amounts of 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 limestone, before grading into unweathered, fresh limestone. 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 5 feet thick. Most of the limestone is described as medium to dark gray with a slabby or flaggy habit when broken in pieces by the sonic drilling. The limestone is very finely laminated with lighter and darker gray layers, and also contains interbeds of calcareous shale.

1.2.2 Hydrogeologic Setting

The uppermost aquifer at AP-3 is a regional groundwater aquifer that occurs within the residuum and the weathered and fractured bedrock. The uppermost aquifer is considered to be 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 soil types and horizontal conductivity values, the movement of groundwater in the soil, and to some degree the highly weathered bedrock zone, can be characterized as low-to moderate permeability, porous media flow. Groundwater flow in the more competent underlying bedrock is characterized as fracture flow. Flow direction within the area of AP-3 is generally from west to east.

1.3 Groundwater Monitoring Well Network

In accordance with § 257.91, a groundwater monitoring system was installed at AP-3 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. Prior to November 2019, the certified compliance monitoring well network for AP-3 consisted of four monitoring wells. The well network was certified by a professional engineer (PE) on April 17, 2019; the certification is maintained in the AP-3 Operating Records.

As part of the assessment monitoring program, two compliance monitoring wells (HGWC-125 and HGWC-126) and three piezometers (MW-32, MW-39, and MW-41) were installed during this reporting period to provide additional data to characterize groundwater quality and flow conditions downgradient of AP-3. Two piezometers (MW-21 and MW-23) were previously installed at the Site and are used to gauge water levels to define groundwater flow direction and gradients.

The locations of the compliance monitoring wells and piezometers associated with AP-3 are shown on **Figure 2**; well construction details are listed in **Table 1**.

2.0 GROUNDWATER MONITORING ACTIVITIES

In accordance with § 257.90(e), the following describes groundwater monitoring-related activities performed for AP-3 from August 2019 through July 2020 and discusses any changes in status of the monitoring program. All groundwater sampling was performed in accordance with § 257.93.

2.1 Monitoring Well Installation and Maintenance

As discussed in Section 1.3, two additional compliance monitoring wells (HGWC-125 and HGWC-126) and three piezometers (MW-32, MW-39, and MW-41) were installed during this reporting period. Well HGWC-125 was installed in May 2020 at the request of GA EPD (GA EPD, 2020). Well HGWC-126 was installed in November 2019, initially as piezometer MW-31 but was later reclassified as a compliance monitoring well, also at the request of GA EPD (GA EPD, 2020). A well installation report that includes detailed boring and well construction logs for the installation of wells HGWC-125, MW-39, and MW-41 is provided in **Appendix A1**. An installation report for HGWC-126 (identified as MW-31 in the installation report) and MW-32, previously submitted to GA EPD (Geosyntec, 2020a) and is provided as **Appendix A2**.

The well and piezometer networks are inspected during each groundwater monitoring event using GA EPD-based inspection criteria. Any issues identified with the wells (e.g., clogged weep holes within the outer protective casing, faded well identification signage, rusted locks and/or latches, etc.) are addressed before the following groundwater monitoring event. The well inspection forms for this reporting period are provided in **Appendix B**.

The AP-3 well network was re-surveyed by GEL Solutions May 11-14, 2020. The top of the PVC well casing [top of casing (TOC) elevation] and the survey pin installed at each well pad were surveyed to within 0.5-foot horizontal accuracy and to 0.01-foot vertical accuracy. The horizontal location (i.e., northings and eastings) was recorded in feet relative to the North America Datum of 1983 (NAD) with the vertical elevation recorded in feet relative to the North American Vertical Datum of 1988. The new survey data are incorporated into this report's applicable tables; a copy of the well survey data certified by a Georgia-licensed surveyor is included with the well installation report provided in **Appendix A1**. Included in **Appendix A3** are revised AP-3 boring and well construction logs that incorporate the new survey data. The revised set of logs include the wells listed on Table 1 of this annual report.

In addition to completing routine maintenance of the well network, SCS Civil Field Services (CFS) installed a dedicated QED bladder pump with dedicated tubing in wells HGWA-122, HGWC-121A, and HGWC-124 in September 2019.

2.2 Assessment Monitoring

In response to identified SSIs of Appendix III constituents during the first detection monitoring event conducted in April 2019, GPC initiated an assessment monitoring program for groundwater at AP-3 in August 2019. An Assessment Monitoring Program Notification was prepared for AP-3 on November 13, 2019, pursuant to § 257.94(e)(3) and placed in the Operating Records of the ash pond as required by § 257.105(h)(5).

Pursuant to § 257.95(b), samples were collected from the compliance monitoring well network (HGWA-122, HGWC-120, HGWC-121A, HGWC-124) within 90 days of initiating the assessment monitoring program; the event was conducted in August 2019. The collected samples were analyzed for the complete list of Appendix IV constituents. The four AP-3 compliance wells were subsequently resampled semiannually in October 2019 and March 2020. The samples from the semiannual events were analyzed for Appendix III constituents and the following Appendix IV constituents that were detected during the August 2019 event: barium, chromium, cobalt, fluoride, lead, lithium, molybdenum, and combined radium 226/228. Laboratory and field data reports for the August 2019, October 2019, and March 2020 monitoring events are included in **Appendix C**. The number of AP-3 groundwater samples collected for analysis and the sample collection dates are summarized in **Table 2**.

Pursuant to § 257.94(b), eight independent groundwater samples (i.e., background monitoring events) should be collected from the two new compliance wells (HGWC-125, HGWC-126) to statistically establish background conditions in the wells. The first and second background monitoring events were conducted on May 22, 2020 and June 16, 2020, respectively. For each event, the samples were analyzed for the complete list of Appendix III and Appendix IV constituents.

3.0 SAMPLING METHODOLOGY & ANALYSES

The following section presents a summary of the field sampling procedures that were implemented in connection with the assessment monitoring program conducted at AP-3 during the reporting period.

3.1 Groundwater Level Measurement

Prior to each sampling event, a synoptic round of depth-to-groundwater level measurements were recorded from the AP-3 wells and piezometers and used to calculate the groundwater elevations. The calculated groundwater elevations for the August 2019, October 2019, and March 2020 monitoring events are presented in **Table 3**. The May 2020 survey data was used to calculate the groundwater elevations for the March 2020 event. The August 2019 and October 2019 groundwater elevations were calculated using the prior survey data and previously submitted to GA EPD in March 2020 as part of the 2019 semiannual report (Geosyntec, 2020b). The March 2020 elevations reported using the new survey data are representative of the groundwater elevations reported for prior monitoring events.

The groundwater elevation data were used to prepare potentiometric surface contour maps for the August 2019, October 2019, and March 2020 assessment monitoring events, which are presented on **Figures 3, 4, and 5**, respectively. Groundwater in the AP-3 area flows under the influence of topography from slightly higher ground surface elevations on the western side of the Site towards lower elevations to the east of AP-3.

3.2 Groundwater Gradient and Flow Velocity

The representative groundwater hydraulic gradient within the uppermost aquifer beneath AP-3 was calculated using the August 2019, October 2019, and March 2020 groundwater elevation data. The hydraulic gradient is commonly calculated along the groundwater flow path perpendicular to contours of equal hydraulic head using elevations of two equipotential lines. However, at the request of GA EPD, the hydraulic gradients in this report have been calculated between upgradient and downgradient wells selected to provide the most accurate alignment possible relative to the interpreted groundwater flow path. Hydraulic gradients were calculated between wells MW-21 and HGWC-120 for the August 2019 and October 2019 events. For the March 2020 event, wells HGWA-122 and HGWC-120 are along the groundwater flow path and therefore used to calculate hydraulic gradient. The calculations are presented on **Table 4**. The general trajectories

of the flow paths are shown on each potentiometric map. The average hydraulic gradient for this reporting period across AP-3 is 0.010 feet per foot (ft/ft).

The approximate horizontal flow velocity associated with AP-3 groundwater was calculated using the following derivative of Darcy's Law.

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

where:

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

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

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

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

Aquifer testing was conducted by LETCO in 1977, SCS in 2014, and Geosyntec in 2017 to evaluate hydraulic conditions in the vicinity of AP-3. Slug testing was performed to estimate the horizontal hydraulic conductivity (K_h) for units above the top of bedrock, while single packer testing was used to estimate the K_h for the bedrock intervals. Additional details are presented in the HAR Rev 01 (Geosyntec, 2019b).

The groundwater flow velocity calculation was performed using the geometric mean value for K_h of the highly weathered/fractured rock of 9.8×10^{-4} centimeters per second (cm/sec) or 2.76 feet per day (ft/day). An estimated effective porosity of 0.15 is used to represent average lithologic conditions at AP-3, derived based on review of literature, observed site lithology, and professional judgement. With these variables determined, and accounting for the average hydraulic gradient discussed above, the average horizontal groundwater flow velocity underneath AP-3 for this reporting period was calculated to be 0.18 ft/day.

3.3 Groundwater Sampling Procedures

Groundwater samples were collected from the compliance monitoring network using low-flow sampling procedures in accordance with § 257.93(a). For the August 2019 event, well HGWC-120 was purged and sampled using the dedicated bladder pump with

tubing; wells HGWA-122, HGWC-121A, and HGWC-124 were sampled using a peristaltic pump equipped with new disposable polyethylene tubing. For the October 2019 and March 2020 events, all four compliance wells were purged and sampled using installed bladder pumps with dedicated tubing. The newly installed wells HGWC-125 and HGWC-126 were purged using a non-dedicated bladder pump with 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 listed below 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 dissolved oxygen (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, and 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. in Norcross, Georgia following chain-of-custody protocol. The field sampling forms generated during the monitoring events are provided in **Appendix C**.

3.4 Laboratory Analyses

Laboratory analyses were performed by Pace Analytical Services, LLC. (Pace Analytical), which is accredited by the National Environmental Laboratory Accreditation Program (NELAP). Pace Analytical maintains a NELAP certification for the Appendix III and Appendix IV constituents analyzed for this project. Analytical methods used for groundwater sample analysis are listed in the analytical laboratory reports included in **Appendix C**.

The groundwater analytical results from the August 2019, October 2019, and March 2020 sampling events, and additional background sampling events for HGWC-125 and

HGWC-126, are summarized in **Table 5**. The associated Pace Analytical laboratory reports are provided in **Appendix C**.

3.5 Quality Assurance & Quality Control Summary

Quality assurance/quality control (QA/QC) samples were collected during the groundwater monitoring events 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 constituents by Pace Analytical.

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 guidance documents (USEPA, 2001, 2011, and 2017). The associated data validation reports are provided in **Appendix C** with the laboratory reports.

4.0 STATISTICAL ANALYSIS

The following section summarizes the statistical analysis of Appendix III groundwater monitoring data performed pursuant to § 257.93. In addition, pursuant to § 257.95(d)(2), GPC established groundwater protection standards (GWPS) for the Appendix IV monitoring constituents and completed statistical analyses of the Appendix IV groundwater monitoring data obtained during the assessment monitoring events. Reports generated from the analyses are provide in **Appendix D**. The October 2019 data were analyzed by Geosyntec (Geosyntec, 2020c) and the March 2020 data analyzed by Groundwater Stats Consulting (GSC) (GSC, 2020).

4.1 Statistical Methods

Analytical data from the October 2019 and March 2020 semiannual monitoring events were statistically analyzed in accordance with the PE-certified Statistical Analysis Method Certification (October 2017, revised January 2020). 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).

Appendix III statistical analysis was performed to determine if Appendix III constituents have returned to background levels. Appendix IV assessment monitoring constituents were evaluated to determine if concentrations statistically exceeded the established state and federal GWPS. Detailed statistical methods used for Appendix III and Appendix IV constituents are discussed in statistical analysis packages provided in **Appendix D** and summarized in Sections 4.1.1 and 4.1.2. The GWPS were finalized pursuant to § 257.95(d)(2) and presented in **Table 6**.

4.1.1 Appendix III Statistical Methods

Based on guidance from GA EPD, 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 constituents. Interwell prediction limits (PLs) are constructed using data from upgradient well HGWA-122 to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are SSIs. An "initial exceedance" occurs when an Appendix III constituent reported in the groundwater of a

downgradient compliance monitoring well exceeds the constituent's associated PL. The 1-of-2 resample plan allows for collection of an independent resample. A confirmed exceedance is noted only when the resample confirms the initial exceedance by also exceeding the statistical limit. If the resample falls within its respective prediction limit, no exceedance is declared.

4.1.2 Appendix IV Statistical Methods

To statistically compare groundwater data to GWPS, confidence intervals are constructed for each of the detected Appendix IV constituents in each downgradient compliance monitoring well. The 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 a confidence interval exceeds a GWPS, a statistically significant level (SSL) exceedance is identified.

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

- (1) The maximum contaminant level (MCL) established under §141.62 and 141.66.
- (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 0.10 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 GA EPD's CCR Rule. The GA 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**.

4.2 Statistical Analyses Results

Based on review of the Appendix III statistical analysis, groundwater conditions have not returned to background and assessment monitoring should continue. Based on the statistical analysis of Appendix IV constituents, the following constituents exceeded the state or federal GWPS for the identified assessment monitoring event:

October 2019 Assessment Monitoring Event

AP-3 (Federal CCR Rule):

- No SSLs were reported above federal GWPS.

AP-3 (GA EPD CCR Rule):

- Lithium: HGWC-120
- Molybdenum: HGWC-120

March 2020 Assessment Monitoring Event

AP-3 (Federal CCR Rule):

- No SSLs were reported above federal GWPS.

AP-3 (GA EPD CCR Rule):

- Molybdenum: HGWC-120

A groundwater exceedance notification acknowledging the October 2019 SSLs of lithium and molybdenum was placed in the Operating Record on May 8, 2020 pursuant to § 257.95(g) and § 257.105(h)(8). A similar notification will be placed in the Operating Record for the March 2020 SSL within 30 days of statistically identifying the exceedance.

5.0 MONITORING PROGRAM STATUS

In accordance with § 257.94(e), an assessment monitoring program was established for AP-3 in August 2019. SSIs of Appendix III constituents and SSLs of Appendix IV constituents were identified at AP-3 during sampling events conducted during the 2019/2020 reporting period. An assessment of corrective measures was initiated within 90 days of the May 2020 SSL notification in accordance with § 257.96; the notification was placed into the Operating Record on July 9, 2020.

Pursuant to § 257.94(b), eight independent groundwater samples (i.e., background monitoring events) will be collected from the two new compliance wells (HGWC-125, HGWC-126) to statistically establish background conditions in the wells. The background groundwater sampling events are anticipated to conclude in January 2021.

6.0 CONCLUSIONS & FUTURE ACTIONS

This *2020 Annual Groundwater Monitoring & Corrective Action Report* for GPC Plant Hammond AP-3 was prepared to fulfill the requirements of the USEPA CCR Rule and the GA EPD Rules for Solid Waste Management 391-3-4-.10.

In August 2019, GPC initiated assessment monitoring in accordance with the requirements of § 257.95. Semiannual assessment monitoring events were conducted in October 2019 and March 2020. Statistical evaluation of the October 2019 assessment monitoring data indicated the presence of SSLs of lithium and molybdenum in exceedance of the state GWPS, but not the federal GWPS, in well HGWC-120. A similar statistical analysis of the March 2020 groundwater data identified an SSL of molybdenum in HGWC-120 above the state GWPS; lithium was not identified as an SSL for this event. A reduced lithium groundwater concentration reported in March 2020 for HGWC-120 reduced the lower confidence interval set point to below the state GWPS of 0.03 mg/L, thereby no longer triggering an SSL status for the constituent. A groundwater exceedance notification will be placed in the Operating Record to reflect this update.

An assessment of corrective measures was initiated on July 9, 2020, in accordance with § 257.96. Pursuant to § 257.96, GPC will continue to monitor groundwater in accordance with the assessment monitoring program as specified in § 257.95.

7.0 REFERENCES

- Georgia Environmental Protection Division (GA EPD), 2020. *Georgia Power Company- Plant Hammond Ash Pond 3, Floyd County, Permit Application Number: APL 0575, Hydrogeologic Assessment Report Revision and Groundwater Model Files Engineering Revision Review letter*. April 28, 2020.
- Geosyntec Consultants, 2019a. *2019 Annual Groundwater Monitoring & Corrective Action Report – Georgia Power Company, Plant Hammond Ash Pond 3 (AP-3)*. July 2019.
- Geosyntec Consultants, 2019b. *Hydrogeologic Assessment Report (Revision 1) - Plant Hammond Ash Pond 3 (AP-3)*. November 2019.
- Geosyntec Consultants, 2020a. *Well Design, Installation, and Development Report – Addendum, Plant Hammond Ash Ponds 2 and 3 (AP-2 and AP-3)*. January 2020.
- Geosyntec Consultants, 2020b. *2019 Semiannual Groundwater Monitoring & Corrective Action Report – Georgia Power Company, Plant Hammond Ash Pond 3 (AP-3)*. March 2020.
- Geosyntec Consultants, 2020c. *2019 Semiannual Groundwater Monitoring & Corrective Action Statistical Summary Letter – Georgia Power Company, Plant Hammond Ash Pond 3 (AP-3)*. April 2020.
- Golder Associates, 2018. *Geologic and Hydrogeologic Report – Plant Hammond*. November 2018.
- Groundwater Stats Consulting (GSC), 2020. *Plant Hammond Ash Pond 3 (AP03) Statistical Analysis – March 2020 Sample Event – Georgia Power Company, Plant Hammond Ash Pond 3 (AP-3)*. July 2020.
- Sanitas: Groundwater Statistical Software, v. 9.6.05 (2018). Sanitas Technologies©, Boulder, CO.
- USEPA, 2001. *Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual*. Science and Ecosystem Support Division. Region IV. Athens, GA. November 2001.

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

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

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

TABLES

Table 1
Monitoring Well Network Summary
Plant Hammond AP-3, Floyd County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Top of Casing Elevation ⁽²⁾ (ft NAVD88)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Elevation (ft NAVD88)	Well Depth (ft BTOC) ⁽³⁾	Screen Interval Length
<i>Compliance Monitoring Well</i>									
HGWA-122	Upgradient	11/20/2014	1551251.42	1941887.11	587.90	570.54	560.54	27.76	10
HGWC-120	Downgradient	6/27/2016	1551067.24	1942926.62	605.82	548.83	538.83	67.00	10
HGWC-121A	Downgradient	7/17/2017	1550607.97	1943030.44	584.69	556.71	546.71	37.98	10
HGWC-124	Downgradient	11/13/2014	1551624.93	1942781.05	582.52	557.80	547.80	35.12	10
HGWC-125	Downgradient	5/4/2020	1550821.41	1942962.87	608.89	556.03	546.03	63.19	10
HGWC-126 ⁽⁴⁾	Downgradient	11/25/2019	1550422.03	1942689.40	611.24	552.72	542.72	68.52	10
<i>Piezometer</i>									
MW-21	Downgradient	12/3/2014	1550270.15	1941809.76	586.27	570.40	560.40	26.28	10
MW-23	Downgradient	11/24/2014	1551641.44	1942496.83	584.91	563.03	553.03	32.28	10
MW-32	Downgradient	11/22/2019	1551092.83	1943021.47	585.46	559.30	549.30	36.16	10
MW-39	Downgradient	3/16/2020	1551111.45	1943089.26	580.42	564.93	554.93	25.82	10
MW-41	Downgradient	5/18/2020	1551158.16	1943196.47	577.25	563.20	553.20	24.38	10

Notes:

ft = feet

ft BTOC = feet below top of casing

- (1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey data obtained May 19, 2020.
- (2) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Survey data obtained May 19, 2020.
- (3) Total well depth accounts for sump if data provided on well construction logs.
- (4) Well HGWC-126 was originally installed as piezometer MW-31 but reclassified as a compliance monitoring well in May 2020.

Table 2
Groundwater Sampling Event Summary
Plant Hammond AP-3, Floyd County, Georgia

Well ID	Hydraulic Location	Aug 21-23, 2019	Oct 21-22, 2019	Mar 24-25, 2020	May 22, 2020	Jun 16, 2020	Status of Monitoring Well
Purpose of Sampling Event:		Initial App. IV Annual	Assessment	Assessment	Background	Background	
<i>Compliance Monitoring Well</i>							
HGWA-122	Upgradient	S01	A01	A02	--	--	Assessment
HGWC-120	Downgradient	S01	A01	A02	--	--	Assessment
HGWC-121A	Downgradient	S01	A01	A02	--	--	Assessment
HGWC-124	Downgradient	S01	A01	A02	--	--	Assessment
HGWC-125	Downgradient	--	--	--	BG01	BG02	Assessment ⁽¹⁾
HGWC-126	Downgradient	--	--	--	BG01	BG02	Assessment ⁽¹⁾

Notes:

A## = Semiannual assessment monitoring event number for given reporting year.

BG## = Background monitoring event number

S## = Initial annual Appendix IV sampling event number since initiation of the assessment monitoring program in August 2019.

(1) Pursuant to § 257.94(b), a minimum of eight independent groundwater samples (i.e., background monitoring events) should be collected from the two new compliance wells (HGWC-125, HGWC-126) to statistically establish background conditions in the wells.

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

Well ID	Top of Casing Elevation (ft NAVD88) ⁽¹⁾	Aug 21, 2019		Oct 21, 2019		Top of Casing Elevation (ft NAVD88) ⁽²⁾	Mar 23, 2020	
		Depth to Water (ft BTOC)	Groundwater Elevation (ft NAVD88)	Depth to Water (ft BTOC)	Groundwater Elevation (ft NAVD88)		Depth to Water (ft BTOC)	Groundwater Elevation (ft NAVD88) ⁽³⁾
<i>Compliance Monitoring Well</i>								
HGWA-122	588.05	15.38	572.67	16.96	571.09	587.90	5.18	582.72
HGWC-120	605.92	40.98	564.94	41.71	564.21	605.82	37.95	567.87
HGWC-121A	584.85	18.46	566.39	19.32	565.53	584.69	15.74	568.95
HGWC-124	582.64	17.80	564.84	17.90	564.74	582.52	10.25	572.27
HGWC-125	--	--	--	--	--	608.89	--	--
HGWC-126	--	--	--	--	--	611.24	38.75	572.49
<i>Piezometer</i>								
MW-21	586.39	10.91	575.48	12.32	574.07	586.27	3.84	582.43
MW-23	585.09	15.67	569.42	16.65	568.44	584.91	6.11	578.80
MW-32	--	--	--	--	--	585.46	17.70	567.76
MW-39	--	--	--	--	--	580.42	12.72	567.70
MW-41	--	--	--	--	--	577.25	--	--

Notes:

ft = feet

ft BTOC = feet below top of casing

(1) Survey data obtained March 14, 2018. Elevations referenced to the North American Vertical Datum of 1988 (ft NAVD88).

(2) Survey data obtained May 19, 2020. Elevations referenced to the North American Vertical Datum of 1988 (ft NAVD88).

(3) March 2020 groundwater elevations were calculated using the May 19, 2020 survey data.

-- = Well/Piezometer was not installed at the time of depth to water measurement.

Table 4
 Horizontal Groundwater Gradient and Flow Velocity Calculations
 Plant Hammond AP-3, Floyd County, Georgia

Flow Path Direction	K (ft/d)	n	Aug 21, 2019					Oct 21, 2019				
			h ₁ (ft)	h ₂ (ft)	Δl (ft)	Δh/Δl (ft/ft)	V (ft/d) ⁽¹⁾	h ₁ (ft)	h ₂ (ft)	Δl (ft)	Δh/Δl (ft/ft)	V (ft/d) ⁽¹⁾
Westerly Flow Path (MW-21 to HGWC-120)	2.76	0.15	575.5	564.9	1,350	0.0078	0.14	574.1	564.2	1,350	0.0073	0.13

Flow Path Direction	K (ft/d)	n	Mar 23, 2020				
			HGWA-122 (ft)	HGWC-120 (ft)	Δl (ft)	Δh/Δl (ft/ft)	V (ft/d) ⁽¹⁾
Westerly Flow Path (HGWA-122 to HGWC-120)	2.76	0.15	582.7	567.9	1,057	0.014	0.26

Flow Path Direction	K (ft/d)	n	Average 2019/2020	
			Δh/Δl (ft/ft)	V (ft/d) ⁽¹⁾
Westerly Flow Path	2.76	0.15	0.010	0.18

Notes:

- ft = feet
- ft/d = feet per day
- ft/ft = feet per foot
- K = hydraulic conductivity
- Δh/Δl = hydraulic gradient
- Δh = change in groundwater elevation between identified wells
- Δl = distance between identified wells
- n = effective porosity
- V = groundwater flow velocity
- (1) Groundwater flow velocity equation: $V = [K * (\Delta h / \Delta l)] / n$

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-3, Floyd County, Georgia

Well ID:		HGWA-122	HGWA-122	HGWA-122	HGWC-120	HGWC-120	HGWC-120	HGWC-120	HGWC-121A	HGWC-121A	HGWC-121A
Sample Date:		8/22/2019	10/21/2019	3/24/2020	8/22/2019	10/22/2019	3/25/2020	6/15/2020	8/22/2019	10/21/2019	3/25/2020
Parameter ^(1,2)											
APPENDIX III	Boron	--	0.25	0.10	--	1.0	1.1	1.1	--	2.4	1.6
	Calcium	--	80.8	81.2	--	171	170	175	--	173	139
	Chloride	--	4.5	4.5	--	3.4	2.4	2.3	--	29.9	16.3
	Fluoride	0.12 J	0.15 J	0.085 J	0.30 J	0.53	0.43	0.37	0.20 J	0.18 J	0.095 J
	pH ⁽³⁾	6.51	6.69	7.08	6.79	6.74	6.80	6.80	6.77	6.74	6.91
	Sulfate	--	45.6	25.9	--	266	226	212	--	238	116
	TDS	--	296	278	--	693	665	685	--	771	521
APPENDIX IV	Antimony	<0.00027	--	--	<0.00027	--	--	--	<0.00027	--	--
	Arsenic	<0.00035	--	--	<0.00035	--	--	--	<0.00035	--	--
	Barium	0.044	0.040	0.032	0.050	0.051	0.052	--	0.066	0.074	0.099
	Beryllium	<0.000074	--	--	<0.000074	--	--	--	<0.000074	--	--
	Cadmium	<0.00011	--	--	<0.00011	--	--	--	<0.00011	--	--
	Chromium	0.00060 J	0.00068 J	0.0013 J	0.00072 J	<0.00039	0.0015 J	--	<0.00039	<0.00039	0.00050 J
	Cobalt	<0.00030	<0.00030	<0.00030	0.0028 J	0.0031 J	0.0036 J	--	<0.00030	<0.00030	<0.00030
	Fluoride	0.12 J	0.15 J	0.085 J	0.30 J	0.53	0.43	--	0.20 J	0.18 J	0.095 J
	Lead	<0.000046	0.000097 J	0.00012 J	<0.000046	<0.000046	<0.000046	--	<0.000046	<0.000046	<0.000046
	Lithium	<0.00078	<0.00078	<0.00078	0.029 J	0.030 J	0.024 J	--	0.0084 J	0.0090 J	0.0066 J
	Mercury	<0.00014	--	--	<0.00014	--	--	--	<0.00014	--	--
	Molybdenum	0.0030 J	0.0049 J	0.0091 J	0.039	0.040	0.034	--	<0.00095	<0.00095	<0.00095
	Comb. Radium 226/228	1.19 U	0.772 U	0.379 U	1.35	0.760 U	0.696 U	--	1.30	0.393 U	0.505 U
	Selenium	<0.0013	--	--	<0.0013	--	--	--	<0.0013	--	--
Thallium	<0.000052	--	--	<0.000052	--	--	--	<0.000052	--	--	

Notes:

-- = Parameter was not analyzed

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

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

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, 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 6010D/6020B, Mercury was analyzed by EPA Method 7470A, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

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

(4) Monitoring wells HGWC-125 and HGWC-126 were analyzed for the complete list of Appendix III and Appendix IV constituents to establish background groundwater quality in compliance with 40 CFR 257.93.

The wells will be sampled in this manner for eight independent events.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-3, Floyd County, Georgia

Well ID:		HGWC-124	HGWC-124	HGWC-124	HGWC-125 ⁽⁴⁾	HGWC-125	HGWC-126 ⁽⁴⁾	HGWC-126
Sample Date:		8/23/2019	10/21/2019	3/24/2020	5/22/2020	6/16/2020	5/22/2020	6/16/2020
Parameter ^(1,2)								
APPENDIX III	Boron	--	0.50	0.44	1.5	1.5	0.026 J	0.023 J
	Calcium	--	96.9	104	140	178	112	131
	Chloride	--	3.6	2.7	12.9	10.4	8.6	8.6
	Fluoride	0.11 J	0.073 J	<0.050	0.10 J	0.12	0.46	0.44
	pH ⁽³⁾	7.02	7.05	7.18	6.43	6.29	7.22	6.92
	Sulfate	--	78.5	74.6	345	320	56.1	57.6
	TDS	--	357	355	809	665	496	1160
APPENDIX IV	Antimony	<0.00027	--	--	0.00047 J	<0.00027	<0.00027	<0.00027
	Arsenic	<0.00035	--	--	0.00081 J	0.0014 J	0.00071 J	0.00091 J
	Barium	0.066	0.075	0.075	0.048	0.049	0.24	0.24
	Beryllium	<0.000074	--	--	<0.000074	<0.000074	<0.000074	<0.000074
	Cadmium	<0.00011	--	--	<0.00011	<0.00011	<0.00011	<0.00011
	Chromium	<0.00039	0.00046 J	0.00051 J	0.00058 J	0.00052 J	<0.00039	<0.00039
	Cobalt	<0.00030	<0.00030	<0.00030	0.010	0.0096	<0.00030	<0.00030
	Fluoride	0.11 J	0.073 J	<0.050	0.10 J	0.12	0.46	0.44
	Lead	0.000049 J	0.000049 J	0.000094 J	0.00014 J	0.00013 J	<0.000046	<0.000046
	Lithium	0.0011 J	0.0011 J	0.0012 J	0.0052 J	0.0053 J	0.0046 J	0.0045 J
	Mercury	<0.00014	--	--	<0.00014	<0.00014	<0.00014	<0.00014
	Molybdenum	0.0014 J	0.0013 J	0.0010 J	<0.00095	<0.00095	<0.00095	<0.00095
	Comb. Radium 226/228	0.834	1.11 U	0.796 U	1.56 U	--	1.82	--
	Selenium	<0.0013	--	--	<0.0013	<0.0013	<0.0013	<0.0013
Thallium	<0.000052	--	--	<0.000052	<0.000052	<0.000052	<0.000052	

Table 6
Summary of Background Concentrations and Groundwater Protection Standards
October 2019 and March 2020 Events
Plant Hammond AP-3, Floyd County, Georgia

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	0.049, 0.053	2	2
Beryllium	mg/L	0.003	0.004	0.004
Cadmium	mg/L	0.0025	0.005	0.005
Chromium	mg/L	0.01	0.1	0.1
Cobalt	mg/L	0.005	0.006	0.005
Fluoride	mg/L	0.29, 0.28	4	4
Lead	mg/L	0.005	0.015	0.005
Lithium	mg/L	0.03	0.04	0.03
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	1.87, 1.81	5	5

Notes:

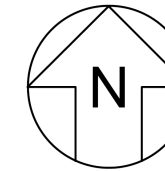
"mg/L" = milligrams per liter

"pCi/L" = picocuries per liter

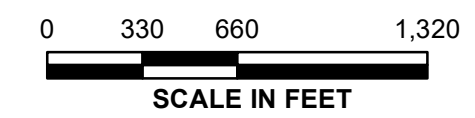
1. The background limits were used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a). Where two numbers are present, they denote the different background levels for each of the two semiannual monitoring events in the order that they were determined.
2. 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 is used; or (iii) background concentrations for constituents where the background level is higher than the MCL or rule-specified GWPS.
3. Under the existing Georgia EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background concentrations for constituents where the background level is higher than the MCL.

FIGURES

N:\GA Power\Plant Hammond\GIS\mxd\Hammond\2020\CCR Reports\AP-3\Figure 1_SiteMap.mxd 7/8/2020 7:51:49 AM



Note:
1. Aerial photograph source: Google Earth Pro, August 2019.



SITE LOCATION MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

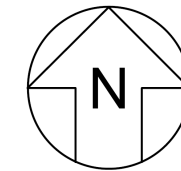
Prepared By: 

KENNESAW, GA

JULY 2020

**FIGURE
1**

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\CCR Reports\AP-3\Figure 2 WellMap.mxd 7/17/2020 9:08:42 AM



- LEGEND**
- + Compliance Monitoring Well
 - + Piezometer



Note:
1. Aerial photograph source: Google Earth Pro, August 2019.



MONITORING WELL NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

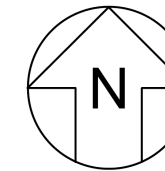
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

FIGURE
2

KENNESAW, GA JULY 2020

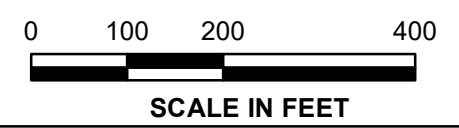
N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\CCR Reports\AP-3\Figure 3 POT Map Aug2019 AP3.mxd 7/16/2020 4:03:03 PM



- LEGEND**
- Compliance Monitoring Well
 - Piezometer
 - Groundwater Elevation Iso-Contour
 - Approximate Groundwater Flow Direction



- Notes:**
1. Water level elevation recorded on August 21, 2019. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
 2. The map shows only the wells/piezometers installed at the time of the gauging event.
 3. Aerial photograph source: Google Earth Pro, August 2019.



POTENTIOMETRIC SURFACE CONTOUR MAP - AUGUST 2019

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

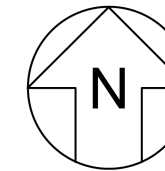
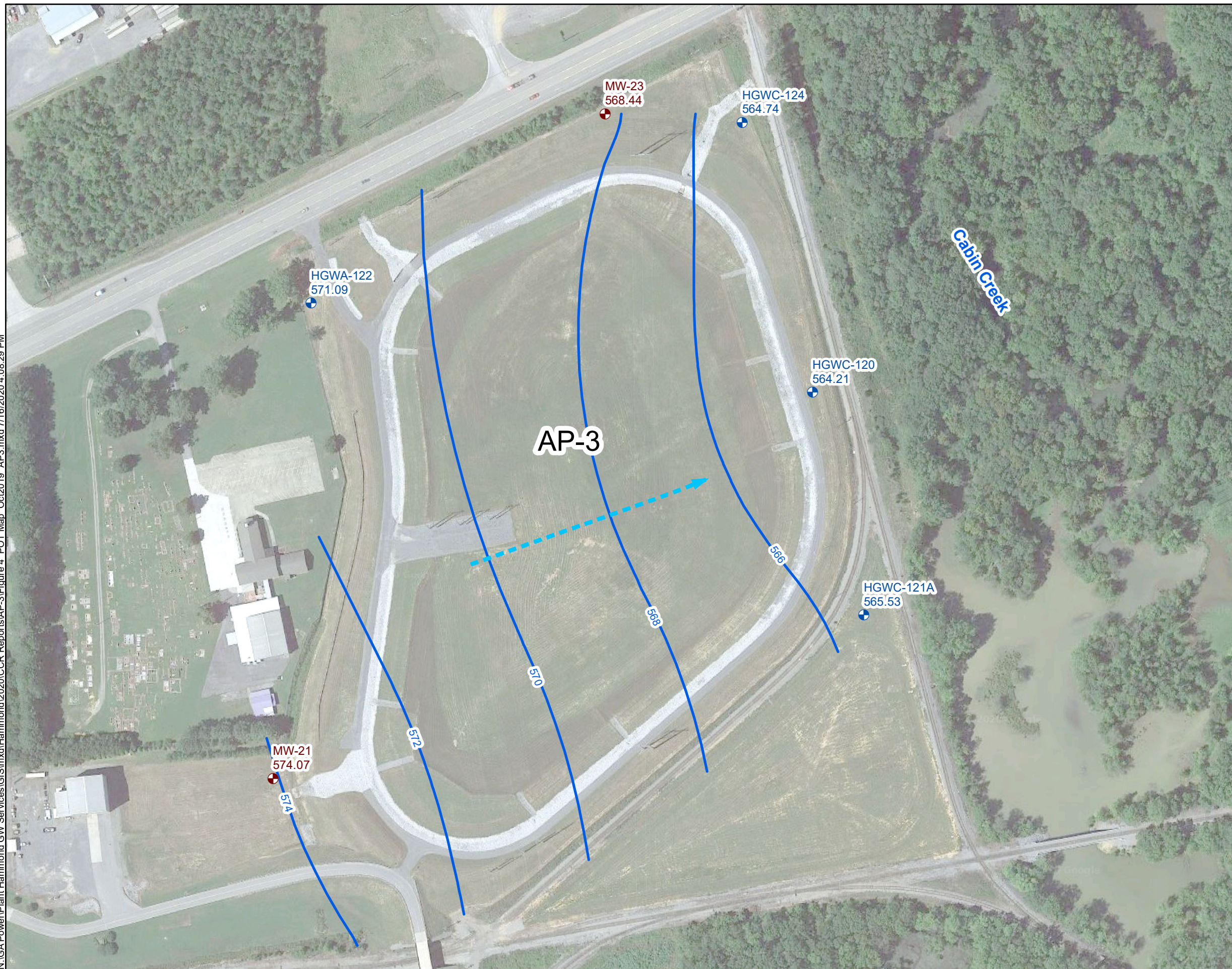
Prepared By: Geosyntec consultants

KENNESAW, GA

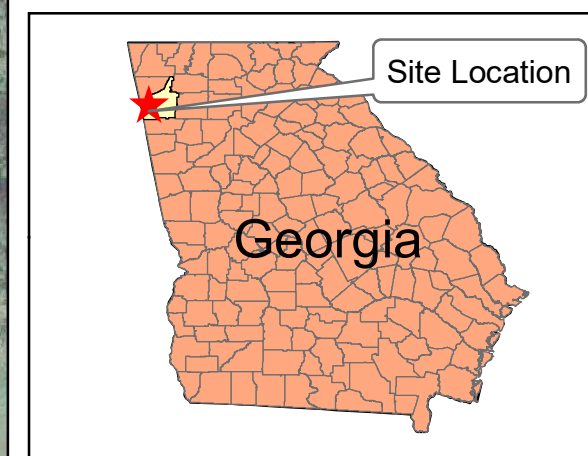
JULY 2020

FIGURE 3

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\CCR Reports\AP-3\Figure 4 POT Map Oct2019 AP3.mxd 7/16/2020 4:08:29 PM



- LEGEND**
- Compliance Monitoring Well
 - Piezometer
 - Groundwater Elevation Iso-Contour
 - Approximate Groundwater Flow Direction



- Notes:**
1. Water level elevation recorded on October 21, 2019. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
 2. The map shows only the wells/piezometers installed at the time of the gauging event.
 3. Aerial photograph source: Google Earth Pro, August 2019.



POTENTIOMETRIC SURFACE CONTOUR MAP - OCTOBER 2019

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

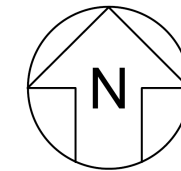
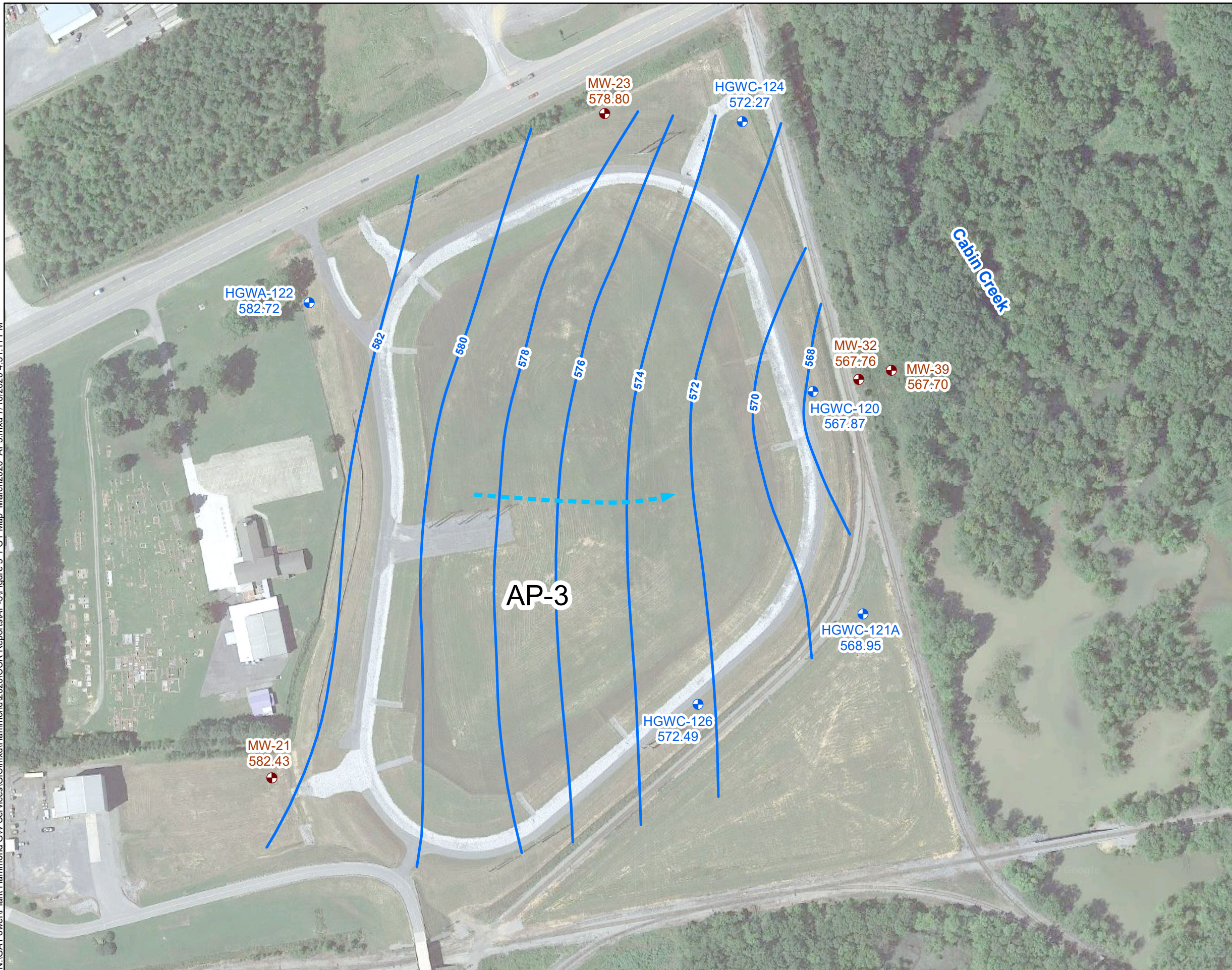
Prepared By: Geosyntec consultants

KENNESAW, GA

JULY 2020

FIGURE 4

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\CCR Reports\AP-3\Figure 5 POT Map March2020 AP3.mxd 7/16/2020 4:31:11 PM



LEGEND

- Compliance Monitoring Well
- Piezometer
- Groundwater Elevation Iso-Contour
- Approximate Groundwater Flow Direction



- Notes:
1. Water level elevation recorded on March 23, 2020. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
 2. The map shows only the wells/piezometers installed at the time of the gauging event.
 3. Aerial photograph source: Google Earth Pro, August 2019.



POTENTIOMETRIC SURFACE CONTOUR MAP - MARCH 2020

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA

JULY 2020

FIGURE 5

APPENDIX A

Appendix A1: Well Design, Installation, and Development Report – Addendum No.2, Plant Hammond Ash Pond 3 (AP-3)

Appendix A2: Well Design, Installation, and Development Report – Addendum No.3, Plant Hammond Ash Ponds 2 and 3 (AP-2 and AP-3)

Appendix A3: Updated Boring and Well Construction Logs

APPENDIX A1

Well Design, Installation, and Development
Report – Addendum No.2, Plant Hammond
Ash Pond 3 (AP-3)

Prepared for

Georgia Power Company
241 Ralph McGill Blvd NE
Atlanta, Georgia 30308

WELL DESIGN, INSTALLATION, AND DEVELOPMENT REPORT - ADDENDUM

No. 2

**PLANT HAMMOND ASH POND 3
(AP-3)**

Prepared by

Geosyntec 
consultants

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581B

July 2020



**WELL DESIGN, INSTALLATION, AND DEVELOPMENT
REPORT – ADDENDUM No. 2**

Plant Hammond

Ash Pond 3

July 17, 2020

A handwritten signature in black ink, appearing to read "Whitney Law".

Whitney Law, P.E.

Project Manager

Geosyntec Consultants

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Appendix D	Certified Well Survey Data

LIST OF ACRONYMS

AP	Ash Pond
ASTM	American Society for Testing and Materials
CCR	coal combustion residual
CFR	Code of Federal Regulations
CFS	Civil Field Services
DO	dissolved oxygen
GA EPD	Georgia Environmental Protection Division
GPC	Georgia Power Company
NAD	North America Datum
NAVD	North American Vertical Datum
NSF	National Sanitation Foundation
ORP	oxygen reduction potential
PVC	polyvinyl chloride
SCS	Southern Company Services
TOC	top of casing
US EPA	United States Environmental Protection Agency

1. INTRODUCTION

This report provides details regarding the design, installation, and development of three groundwater monitoring wells to supplement the current groundwater monitoring system at Georgia Power Company (GPC) Plant Hammond (Site) Ash Pond 3 (AP-3). The report was prepared as an addendum to previously submitted well design, installation, development and decommissioning reports issued for the Site (ERM, 2017; Geosyntec 2019), and meets the requirements promulgated in the United States Environmental Protection Agency (US EPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D], specifically 40 CFR §257.91(e)(1) and Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4-.10.

Plant Hammond is located in Floyd County, approximately 10 miles west of Rome, Georgia. The current groundwater monitoring system at AP-3 includes 6 wells associated with the CCR compliance monitoring well network and a network of secondary groundwater monitoring wells and piezometers. The locations of these wells and piezometers are shown on **Figure 1**.

2. DRILLING AND WELL INSTALLATION

Well installation and development activities were performed according to accepted industry standards and following guidelines within the *Manual for Groundwater Monitoring* (GA EPD, 1991). Well drilling, installation, and surface completion activities were performed by Cascade Drilling, Inc of Midland, North Carolina under contact with, and the supervision of, Southern Company Services (SCS) Civil Field Services (CFS) personnel. In accordance with the Georgia Water Well Standards Act, the driller was required to have an insurance bond on file with the State of Georgia at the time of drilling. A copy of this bond is provided in **Appendix A**. A professional geologist employed with Geosyntec Consultants (Geosyntec) and registered to practice in the State of Georgia documented the drilling and installation efforts to record observations, soil and rock descriptions, subsurface stratigraphy, water elevations, and other field activities. Geosyntec was also responsible for the development of the newly installed wells.

This report presents the details for the installation and development for AP-3 area compliance monitoring well HGWC-125 and piezometers MW-39 and MW-41 (HGWC-125, MW-39, and MW-41 are referred herein as “well” or “wells”). The locations of these wells are shown on **Figure 1**. Well construction details are provided in **Table 1**; boring and well construction logs are included in **Appendix B**. The wells were installed to provide additional data to characterize groundwater quality and flow conditions downgradient of AP-3.

2.1 Drilling Method

With exception to well MW-39, the boreholes were advanced using rotosonic drilling techniques with continuous core collection. At MW-39, a hollow-stem auger drilling rig was used for borehole advancement. A Terra Sonic Compact Crawler drill rig with a 6-inch sonic drill rod was used to install wells HGWC-125 and MW-41. A CME-550 rubber tire all-terrain vehicle mounted hollow-stem auger drill rig was used to install MW-39 and used an 8-inch (outer diameter) auger. Care was taken so that the drilling methods did not introduce contamination of the groundwater from surface activities. Drilling equipment was cleaned between each borehole.

2.2 Screened Interval

Details regarding the well screen intervals are provided in **Table 1**. Wells are screened in the uppermost water bearing unit of the Site. The three new wells are screened from

approximately 565 to 546 feet (referenced to the North American Vertical Datum of 1988). All wells are constructed with 10 feet of well screen.

2.3 Well Casings and Screens

The wells were constructed of 2-inch inner diameter Schedule 40 polyvinyl chloride (PVC) casing with flush-threaded fittings. Each well was installed with a 10-foot nominal length pre-packed dual-wall well screen with 0.010-inch slots. The casings and pre-packed screens arrived pre-cleaned and packaged by the manufacturer. The pre-packed well screen was constructed onsite by packing sand between slotted PVC and the well screen. Well construction materials are sufficiently durable to resist chemical and physical degradation and not interfere with the quality of groundwater samples. Casing and screens are flush-threaded. Solvent or glue was not used to construct the wells. A threaded bottom cap was attached to the bottom of the screen. The PVC products used were American Society for Testing and Materials (ASTM) and National Sanitation Foundation (NSF) rated. Well screen interval details are provided in **Table 1**.

2.4 Well Intake Design

Wells were designed and constructed to: (1) allow sufficient groundwater flow to the well for sampling; (2) minimize the passage of formation materials (turbidity) into the wells; and (3) ensure sufficient structural integrity to prevent collapse of the well. The annular space between the face of the formation and the screen was filled to minimize passage of formation materials into the wells. A filter pack of clean, well-rounded, quartz sand was installed in each well. The 0.01-inch slot size was selected to minimize the inflow of formation material without impairing influent groundwater flow.

2.5 Filter Pack

Highly Pure Quartzite of Southern Products & Silica Co. silica sand filter pack was used as the appropriate gradation for all wells. Highly Pure Quartzite meets the ASTM D5092 uniformity coefficient specification of 2.5 or less, with a uniformity coefficient of 1.6.

Filter pack material was placed within the pre-packed dual-wall well screens and in the annular space between the outside of the pre-pack screen and borehole wall to ensure an adequate thickness of filter pack material between the well and the formation. Filter pack material placed in the annular space outside of the well screen extended approximately 2 feet above the top of screen. No bridging occurred during filter pack placement.

Upon placement of the filter pack, each well was pumped with a submersible pump to assure settlement of the filter pack. The top of filter pack depth was measured following pumping to ensure appropriate extension of filter sand above the screen. The depth of top of filter pack was measured and recorded on the well construction logs provided in **Appendix B**.

2.6 Annular Seal

A minimum of two feet of bentonite chips (PelPlug time-release-coated 3/8-inch bentonite pellets) were placed immediately above the filter pack by gravity-pouring into the annular space and hydrated per manufacture's specifications. A tremie pipe was used to probe the annular space to ensure that no bridging occurred. If any new well was installed within 15 feet of an existing well, the bentonite seal was also brought above the elevation corresponding to the screen top of the nearby well. This was done to prevent grout from entering the water-bearing or screen zone. The bentonite was hydrated with potable water for a duration meeting the manufacture's specifications prior to grouting the remaining annulus.

The annulus above the bentonite seal was grouted with Aqua Guard bentonite grout placed via tremie pipe from the top of the bentonite seal. During grouting, care was taken to assure that the bentonite seal was not disturbed by locating the base of the tremie pipe approximately 2 feet above the bentonite seal and injecting grout at low pressure/velocity. A cement apron 4-feet by 4-feet by 4-inches was poured around each well. The pad was mounded slightly outward to direct surface drainage away from the well.

2.7 Cap and Protective Casing

The well risers were fitted with a locking cap and a lockable cover. A one-quarter inch vent hole was drilled into the PVC riser pipe to provide an avenue for the escape of gas. The protective cap guards the casing from damage and the locking cap serves as a security device to prevent well tampering. Bollards were installed around the four corners of the concrete pad to protect the well.

A weep hole was drilled in the outer protective casing near the bottom above the concrete pad. Pea gravel was placed inside the protective casing between the riser pipe and the outer casing. Wells were clearly marked with the proper well identification number on the stand-up casing. Construction details are documented on the well construction logs provided in **Appendix B**.

3. WELL DEVELOPMENT

The wells were developed using a combination of surging and pumping to (1) restore the natural hydraulic conductivity of the formation, and (2) to remove fine-grained sediment to ensure low-turbidity groundwater samples. Wells were alternately surged and purged until visually clear of particulates. Turbidity, pH, temperature, conductivity, oxidation-reduction potential (ORP), and dissolved oxygen (DO) measurements were recorded to ensure that each well was fully developed. The development forms are included in **Appendix C**.

All equipment and tubing placed in the well was decontaminated and cleaned prior to use and tubing was disposed of upon completion.

4. SURVEY

Upon completion of the well installation, the horizontal locations and vertical elevations were surveyed by a Georgia-licensed surveyor. The top of the PVC well casing [top of casing (TOC) elevation] and the survey pin installed at each well pad were surveyed to within 0.5-foot horizontal accuracy and to 0.01-foot vertical accuracy. The horizontal location (i.e., northings and eastings) was recorded in feet relative to the North America Datum of 1983 (NAD) with the vertical elevation recorded in feet relative to the North American Vertical Datum of 1988. Certified survey data are provided in the well construction table (**Table 1**). A copy of the certified well survey data for the AP-3 well network is provided in **Appendix D**.

5. REFERENCES

Environmental Resources Management (ERM), 2017. *Well Design, Installation, Development, and Decommissioning Report – Plant Hammond Ash Ponds 1 and 2*. October 2017.

Georgia Environmental Protection Division (GA EPD), Georgia Department of Natural Resources, 1991. *Manual for Groundwater Monitoring*. September 1991.

Geosyntec Consultants, 2019. Well Design, Installation and Development Report – Addendum, Plant Hammond Ash Pond 3 (AP-3). April 2019.

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

TABLE

Table 1
 Summary of Well Construction Details
 Plant Hammond AP-3, Floyd County, Georgia

Well ID	Purpose	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Ground Surface Elevation ⁽²⁾ (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Elevation (ft NAVD88)	Well Depth (ft bgs) ⁽³⁾
HGWC-125	Compliance	5/4/2020	1550821.41	1942962.87	605.70	608.89	556.03	546.03	60.00
MW-39	Piezometer	3/16/2020	1551111.45	1943089.26	577.60	580.42	564.93	554.93	23.00
MW-41	Piezometer	5/18/2020	1551158.16	1943196.47	574.87	577.25	563.20	553.20	22.00

Notes:

ft bgs = feet below ground surface.

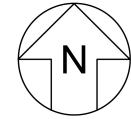
(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey completed by GEL Solutions in May 19, 2020.

(2) Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Ground surface elevation defined at the survey nail installed within the well pad.



(3) Total well depth accounts for 4-inch sump.

FIGURE

N:\GA Power\Plant Hammond\GW Services\GIS\mxd\Hammond\2020\Well Installation Reports\2020.06 AP1AP2AP3\Figure 1 GW Monitoring Network AP3.mxd 7/17/2020 10:15:34 AM



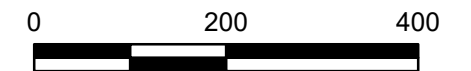
LEGEND

-  Compliance Monitoring Well
-  Piezometer



Notes:

1. Aerial photograph source: Google Earth Pro, August 2019.



SCALE IN FEET

GROUNDWATER MONITORING NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

KENNESAW, GA

JULY 2020

FIGURE
1

APPENDIX A

Well Driller Performance Bonds

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company

, Surety upon

a certain Bond No. 800033976

dated effective 09/27/2017
(MONTH-DAY-YEAR)

on behalf of Ricky Davis / Cascade Drilling, L.P.
(PRINCIPAL)

and in favor of Department of Natural Resources, State of Georgia
(OBLIGEE)

Issued on 9/27/2017
Expires on 6/30/2019
Renewed on 3/4/2019
Expires on 6/30/2021

does hereby continue said bond in force for the further period

beginning on 06/30/2019
(MONTH-DAY-YEAR)

and ending on 06/30/2021
(MONTH-DAY-YEAR)

Amount of bond Thirty Thousand and 00/100 Dollars (\$30,000.00)

Description of bond Performance Bond for Water Well Contractors

Premium: \$1200.00

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on March 4th, 2019
(MONTH-DAY-YEAR)

Atlantic Specialty Insurance Company

By Andrew P. Larsen
Attorney-in-Fact Andrew P. Larsen

Parker, Smith & Feek, Inc.

Agent

2233 112th Ave NE Bellevue, WA 98004

Address of Agent

425-709-3600

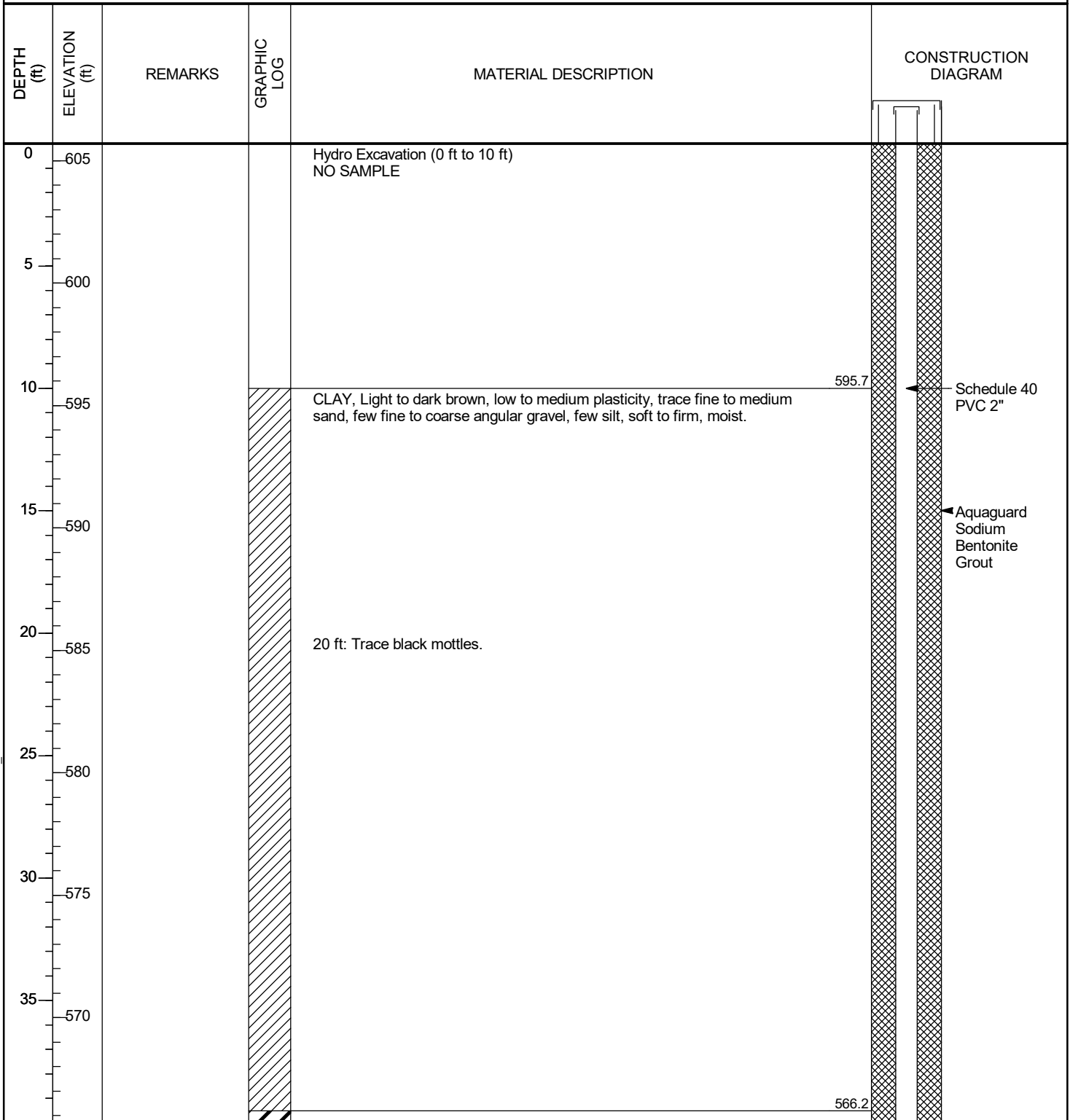
Telephone Number of Agent



APPENDIX B

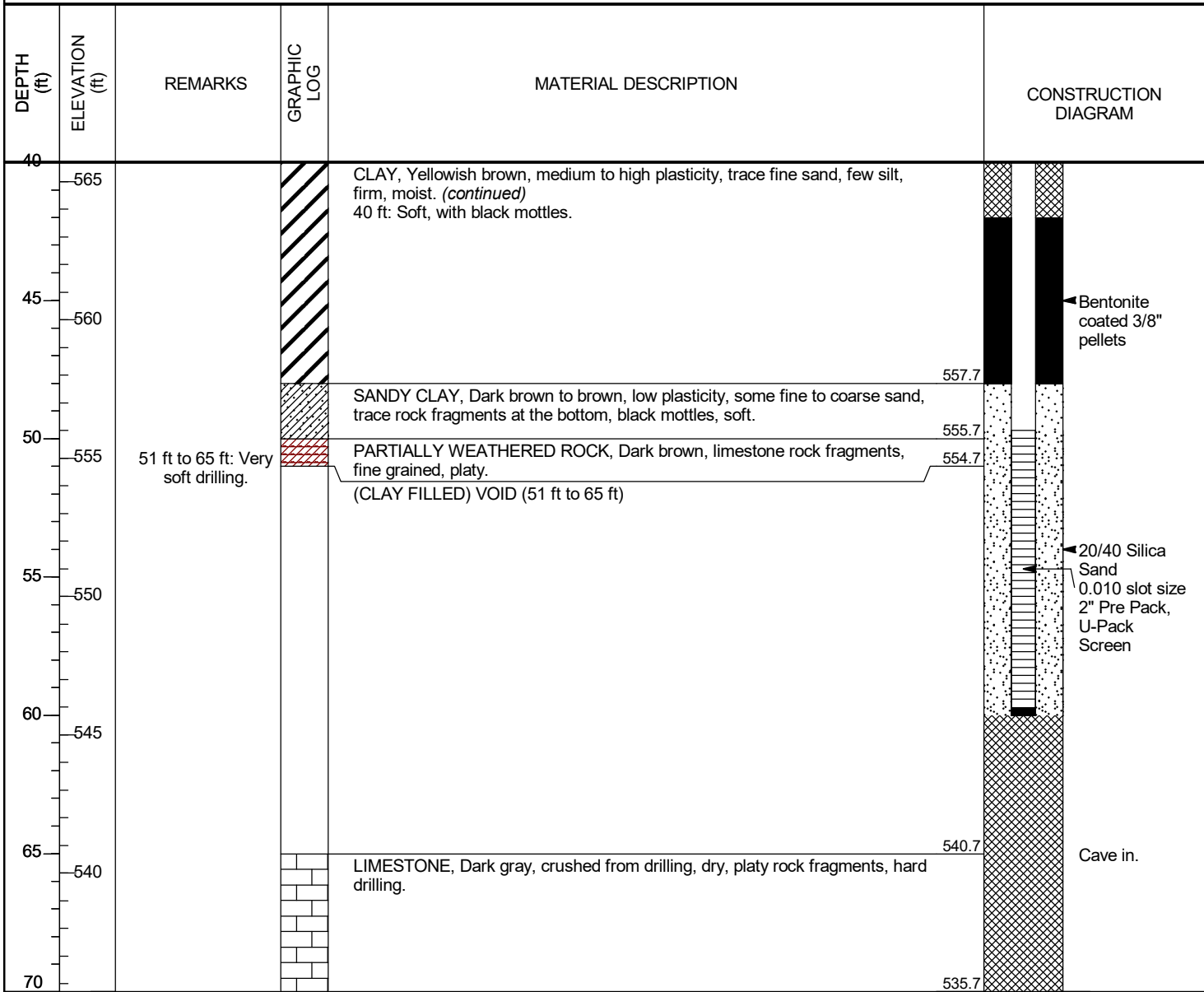
Boring and Well Construction Logs

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/4/20</u> COMPLETED <u>5/4/20</u>	NORTHING <u>1550821.41 ft</u> EASTING <u>1942962.87 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>605.70 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>608.89 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>



SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41 MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20

CLIENT Southern Company Services **PROJECT NAME** Plant Hammond Well Installation
PROJECT NUMBER GW6581B **PROJECT LOCATION** Plant Hammond



Bottom of borehole at 70.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41, MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20

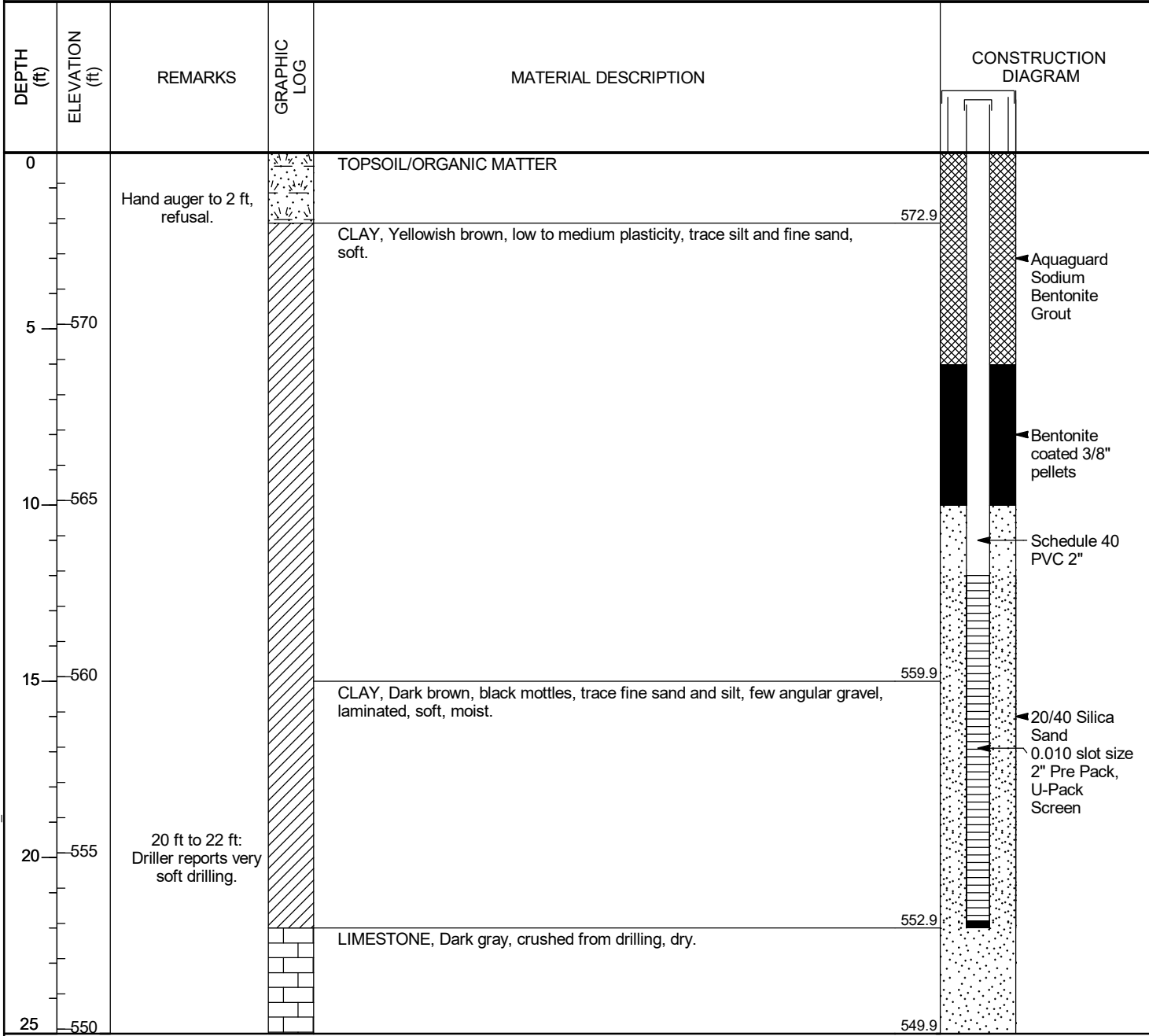
CLIENT Southern Company Services	PROJECT NAME Plant Hammond Well Installation
PROJECT NUMBER GW6581B	PROJECT LOCATION Plant Hammond
DATE STARTED 3/16/20 COMPLETED 3/16/20	NORTHING 1551111.45 ft EASTING 1943089.26 ft
DRILLER SCS Field Services	GROUND ELEVATION 577.60 ft BORING DIAMETER 8 in
DRILLING METHOD Hollow Stem Auger and Coring	TOP OF CASING ELEVATION 580.42 ft
SAMPLING METHOD Split Spoon	GEOPHYSICAL CONTRACTOR ---
RIG TYPE CME 550	LOGGED BY N.Tilahun CHECKED BY D.Yifru

DEPTH (ft)	ELEVATION (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0				0 ft to 9 ft: Hand auger.		GRAVELLY CLAY, Light brown, low plasticity, gravel is fine grained, angular to subangular, trace fine to coarse sand, few silt, firm to stiff.	
5				9 ft to 18.7 ft: Hollow stem auger.			
		100	3-2-3 (5)			CLAY, Brown, low to medium plasticity, soft to firm, trace angular gravel, trace fine sand and silt, moist.	
						No sample.	
		100	1-2-2 (4)			CLAY, Brown, medium plasticity, trace silt and fine to coarse sand, soft, fine angular gravel, moist.	
						No sample.	
		100	50	From 18.7 ft: Coring.		PARTIALLY WEATHERED ROCK (PWR), Dark brown to black, fine grained, laminated, trace angular gravel, very hard, wet.	
						LIMESTONE, Dark gray to white, thinly bedded, with calcite fillings, slightly weathered, mostly mechanical breaks.	

Bottom of borehole at 23.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW31 TO MW39 MARCH2020.GPJ ACP GINT LIBRARY CH.GLB 7/18/20

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/18/20</u> COMPLETED <u>5/18/20</u>	NORTHING <u>1551158.16 ft</u> EASTING <u>1943196.47 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>574.87 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>577.25 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>



Bottom of borehole at 25.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41, MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 6/24/20

APPENDIX C

Well Development Forms

WELL DEVELOPMENT LOG SHEET

Client: Go Tower Project No: GW1581B Development Date: 5/15/20 - 5/20/20

Site: Plant (Newman) Location: AP-7 Field Personnel Name: Joe W. Newman

Well ID: MW-33D / 146WD-125 Pump Type/Model: Waste Air Pump / American

Total Depth (ft) (after purge): 21' to 60' Tubing Material: Poly

Depth to Water (ft): 43.22' Pump Intake Depth (ft): 50-60'

Well Diameter (in): 2" Start/Stop Purge Time: 320 5/15/20 - 1500 5/16/20, 8550 5/20/20 - 11:00 5/20/20

Well Volume (gal) = 0.041 L/h Purge Rate (mL/min): ~1 L/min

Well Volume (L) = gal * 3.785 Total Purge Volume (L): 190 L

d = well diameter (inches); h = length of water column (feet)

Well Type: Flush Stuck Up

Well Lock: Yes No

Well Cap Condition: Good Replace

Well Tag Present: Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft bloc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
0920							43.22	~1 L	~1 L	
0930								~1 L	~1 L	
0935	7.25	0.72	99.2	4.50	19.42	21.1		~1 L	~1 L	
0938	7.65	1.15	85.3	10.07	18.17	45.1		~1 L	~1 L	
0944	7.29	0.08	76.2	1.15	18.17	11.7		~1 L	~1 L	
0930	7.22	1.15	145.2	2.10	18.84	131	43.22	~1 L/min	~1 L	Valid Pump before 2 hrs - (Staged) at 1300 resumed at 0900 5/20/20. DTW 43.26
0950	7.53	1.11	117.6	1.28	18.78	39.9		~1 L/min	~1 L	
1000	7.21	1.55	112.0	3.79	19.32	14.1		~1 L/min	~1 L	
1010	7.17	1.10	102.0	1.24	19.10	5.07		~1 L/min	~1 L	
1037	7.33	1.06	102.3	4.52	20.34	9.32		~1 L/min	~1 L	
1054	7.15	1.10	100.8	5.25	19.02	6.15		~1 L/min	~1 L	
1057	7.07	1.11	92.6	7.39	18.97	5.21		~1 L/min	~1 L	
1100										
1105										
1110										
1115										
1120										
1125										
1130										
1135										
1140										
1145										
1150										
1155										
1200										

Stabilizing Criteria +/- 0.1 SU +/- 5% < 5 NTUs

DO: 0.2 mg/L or 10% for DO or 5 mg/L (min for response)

5/15/20

WELL DEVELOPMENT LOG SHEET

Client: Weston - Park (Kemp) Project No: GW0501 Development Date: 7/15/03
 Site: Route 1000 - A-2 Location: Route 100 Field Personnel Name: Tommy Anderson
 Well ID: 100-23 Pump Type/Model: Newton
 Total Depth (ft) (after purge): 27 Tubing Material: Poly
 Depth to Water (ft): 7.2 Pump Intake Depth (ft): 13-23'
 Well Diameter (in): 2.00 Start/Stop Purge Time: 11:20 / 11:25
 Well Volume (gal) = 0.041d³h: 2.58 Purge Rate (mL/min): 2000
 Well Volume (L) = gal * 3.785: 9.77 Total Purge Volume (L): 227

d = well diameter (inches) h = length of water column (feet)
 Well Type: Flush Stick Lip
 Well Lock: Yes No
 Well Cap Condition: Good Replace
 Well Tag Present: Yes No

Time	pH (SI)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft bosc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1:23	7.02	850.7	16.2	1.57	16.6	97.7	7.20'	2000	23'	
1:33	7.07	857.07	23.0	0.73	16.47	19.0		2000	32	
1:32	7.05	821.21	18.0	0.25	16.56	12.03 A		2000	14	
1:58	7.07	870.87	17.7	0.27	16.65	39.2		2000	60	
1:11	7.08	870.90	0.2	0.25	16.74	16.82		2000	76	
1:17	7.05	860.17	2.1	0.29	16.71	27.7		2000	88	
1:20	7.03	809.57	-1.7	0.25	16.63	133		2000	108	
1:25	7.02	867.5	-1.8	0.25	16.67	58.7		2000	124	
1:27	7.02	807.00	-7.8	0.22	16.67	16.2		2000	144	
1:28	7.02	806.96	-7.8	0.24	16.65	71.6		2000	159	
1:28	7.01	806.96	-7.3	0.24	16.65	81.6		2000	160	
1:30	7.03	809.87	-1.3	0.29	16.66	106.7		2000	172	
1:30	7.01	851.43	5.0	0.30	16.62	172.1		2000	192	
1:31	7.01	848.73	4.3	0.37	16.61	16.0		2000	208	
1:31	7.01	847.15	6.3	0.39	16.65	9.2		2000	216	
1:32	7.01	851.19	5.7	0.37	16.67	6.03		2000	226	
1:32	7.01	847.28	6.3	0.39	16.66	5.50		2000	227	

Stabilizing Criteria: +/- 0.1 SI | +/- 5% | < 5 NTUs

DO = 0.2 mg/L (reference to guide)

WELL DEVELOPMENT LOG SHEET

Client: Ge Tower Project No: GLUGS813 Development Date: 5/2/20

Site: Plant Rowland Location: RR Estates E 3 AP's Field Personnel Name: Jason Van Vorst

Well ID: ML-91 Pump Type/Model: Maxima

Total Depth (ft) (after purge): 25' from 22' Tubing Material: 3" Polyprop

Depth to Water (ft): 11.44' Pump Intake Depth (ft): 45' from 22'

Well Diameter (in): 2" Start/Stop Purge Time: 04:5

Well Volume (gal) = 0.041 d³h _____ Purge Rate (mL/min): _____

Well Volume (L) = gal * 3.785 _____ Total Purge Volume (L): _____

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

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft bloc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
10:01	7.29 7.24	1007	141.7	1.93	16.8	102.3	12.2'	~14.5	~50L	
10:05	7.24	1002	148.9	2.50	16.85	96	12.3'	"	30	
10:10	7.10	1002	145.8	4.53	16.87	75.4	12.2'	"	70	50-60' at 7:30
10:33	7.60	1002	100.0	2.26	16.67	68.1	12.35'	"	14	
10:50	7.52	1003	108.9	3.21	16.47	47.1	12.25'	"	147	
10:55	7.17	1001	105.3	0.81	16.96	32.4	12.20'	"	61	
11:00	7.43	1000	107.6	16.39	17.10	15.0	10.20'	"	162	
11:17	7.17	1001	105.0	4.03	17.02	8.19	2.26'	"	196	
11:20	7.32	1002	105.0	10.92	17.05	5.43	12.21'	"	4207	
11:25	7.19	1002	107.4	9.62	17.01	4.32	12.22'	"	200	

stabilizing criteria +/- 0.1 SU +/- 5%

at 2' depth at 10:50 DO = 0.3 mg/L (reference 0.5 mg/L)

Handwritten notes on the left side of the table.

APPENDIX D

Certified Well Survey Data

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail on Pad Northing	Nail on Pad Easting	Nail on Pad Elevation
HGWA-122	1551251.4160	1941887.1090	587.90	1551251.7520	1941888.4640	585.04
HGWC-120	1551067.2410	1942926.6150	605.82	1551066.9570	1942925.1140	602.83
HGWC-121A	1550607.9660	1943030.4370	584.69	1550606.4290	1943030.8200	582.31
HGWC-124	1551624.9330	1942781.0450	582.52	1551624.4970	1942779.7590	579.80
HGWC-125	1550821.4090	1942962.8700	608.89	1550821.3950	1942961.7570	605.70
HGWC-126	1550422.0250	1942689.3960	611.24	1550422.8480	1942688.6340	608.72
MW-21	1550270.1530	1941809.7590	586.27	1550268.6820	1941809.7320	583.60
MW-23	1551641.4430	1942496.8320	584.91	1551642.7910	1942496.2560	582.13
MW-32	1551092.8320	1943021.4650	585.46	1551094.5220	1943021.1080	583.10
MW-39	1551111.4510	1943089.2570	580.42	1551110.6190	1943087.9290	577.60
MW-41	1551158.1600	1943196.4740	577.25	1551157.3150	1943195.3930	574.87

Benchmark	Northing	Easting	Elevation
BM H-4	1549952.4470	1941611.3640	585.71

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING.
 DATE OF FIELD SURVEY & INSPECTION: 05/11/2020-05/14/2020
 SURVEY POSITIONAL TOLERANCE=0.5 FEET HORIZONTAL-NAD'83, 0.01 VERTICAL-NAVD'88
 EQUIPMENT USED FOR HORIZONTAL LOCATION: TRIMBLE R10 RTK GPS & TRIMBLE S5 ROBOTIC TOTAL STATION. THE VERTICAL LOCATION OF EACH SURVEYED POINT WAS ESTABLISHED BASED UPON LEVEL RUNS WITH A DIGITAL LEVEL LOOP FROM VERTICAL CONTROL ESTABLISHED BY ON-SITE BENCHMARK BM H-4 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL



[Handwritten signature]

5/19/2020

APPENDIX A2

Well Design, Installation, and Development
Report – Addendum No.3, Plant Hammond
Ash Ponds 2 and 3 (AP-2 and AP-3)



Prepared for

Georgia Power Company
241 Ralph McGill Blvd NE
Atlanta, Georgia 30308

WELL DESIGN, INSTALLATION, AND DEVELOPMENT REPORT – ADDENDUM

No. 3

**PLANT HAMMOND ASH PONDS 2 AND 3
(AP-2 AND AP-3)**

Prepared by

Geosyntec 
consultants

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581B

January 2020



**WELL DESIGN, INSTALLATION, AND DEVELOPMENT
REPORT – ADDENDUM No. 3**

Plant Hammond
Ash Ponds 2 and 3
January 30, 2020

A handwritten signature in black ink that reads "Whitney B. Law".

Whitney B. Law, P.E.
Project Manager
Geosyntec Consultants

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LIST OF ACRONYMS

AP	Ash Pond
ASTM	American Society for Testing and Materials
CCR	coal combustion residual
CFR	Code of Federal Regulations
CFS	Civil Field Services
DO	dissolved oxygen
ft MSL	feet mean sea level
GA EPD	Georgia Environmental Protection Division
GPC	Georgia Power Company
NAD83	North America Datum of 1983
NAVD88	North American Vertical Datum of 1988
NSF	National Sanitation Foundation
ORP	oxygen reduction potential
PVC	polyvinyl chloride
SCS	Southern Company Services
TOC	top of casing
US EPA	United States Environmental Protection Agency

1. INTRODUCTION

This report provides details regarding the design, installation, and development of three wells to supplement the current groundwater monitoring system at Georgia Power Company (GPC) Plant Hammond (Site) Ash Ponds 2 and 3 (AP-2 and AP-3). Wells MW-31, MW-32, and MW-33 will be used as groundwater level monitoring piezometers. Wells MW-31 and MW-32 are associated with AP-3, while well MW-33 is associated with AP-2. The report was prepared as an addendum to the *Well Design, Installation, Development, and Decommissioning Report – Plant Hammond Ash Ponds 1 and 2* (ERM, 2017) and the *Well Design, Installation, and Development Report – Plant Hammond Ash Pond 3* (Geosyntec, 2019a) and meets the requirements promulgated in the United States Environmental Protection Agency (US EPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D], specifically 40 CFR §257.91(e)(1).

Plant Hammond is located in Floyd County, approximately 10 miles west of Rome, Georgia. The current groundwater monitoring systems at AP-2 and AP-3 includes wells associated with the certified CCR compliance monitoring well network and groundwater level monitoring piezometers. Additionally, AP-2 has a network of secondary groundwater delineation monitoring wells. The locations of these wells and piezometers are shown on **Figure 1** for AP-3 and **Figure 2** for AP-2. Details regarding the installation of the certified compliance well network are presented in the above referenced ERM and Geosyntec reports, whereas details regarding the installation of the delineation wells at AP-2 are provided in the initial addendum prepared by Geosyntec Consultants (Geosyntec) (Geosyntec, 2019b).

2. DRILLING AND WELL INSTALLATION

Well installation and development activities were performed according to accepted industry standards and following guidelines within the *Manual for Groundwater Monitoring* (GA EPD, 1991). Well drilling, installation, and surface completion activities were performed by Cascade Drilling Inc. (Cascade) of Midland, North Carolina under contact with, and the supervision of, Southern Company Services (SCS) Civil Field Services (CFS) personnel. In accordance with the Georgia Water Well Standards Act, the driller was required to have an insurance bond on file with the State of Georgia at the time of drilling. A copy of this bond is provided in **Appendix A**. A professional geologist (PG) registered to practice in the State of Georgia, and a geologist under the supervision of a PG, both employed with Geosyntec Consultants (Geosyntec), documented the drilling and installation efforts to record observations, soil and rock descriptions, subsurface stratigraphy, water elevations, and other field activities. Geosyntec was also responsible for the development of the newly installed wells.

AP-3 area wells MW-31 and MW-32, and AP-2 area well MW-33 were installed in November 2019. The locations of these wells are shown on **Figures 1** and **2**, respectively. Well construction details are provided in **Table 1**; boring and well construction logs are included in **Appendix B**.

2.1 Drilling Method

Sonic drilling method with continuous core collection was used for borehole advancement at MW-31. At MW-32 and MW-33, hollow-stem auger with 5-ft center [from 10 to 18.5 feet below ground surface (ft bgs)] and continuous (from 18.5 ft bgs to target depth or auger refusal) split spoon soil samplers were used for borehole advancement. At MW-32, a wireline rock coring method was used to advance borings to final depth into the bedrock. A truck-mounted TS-150 Sonic drill rig was used to install well MW-31; a CME-550 rubber tire ATV mounted drill rig installed MW-32 and MW-33 wells. To advance boreholes, the Sonic rig used a 6-inch sonic drill rod and the CME-550 used an 8-inch (OD) auger; a 4-inch drill rod was used for rock coring advancement. Care was taken so that the drilling methods did not introduce contamination of the groundwater from surface activities.

Drilling equipment was cleaned between each borehole.

2.2 Screened Interval

The wells are screened in the uppermost water bearing unit. The three new AP-2 and AP-3 wells are screened from approximately 566 to 543 feet mean sea level (ft MSL) as surveyed relative to the North American Vertical Datum 1988 (NAVD88). All wells are constructed with 10 feet of well screen.

2.3 Well Casings and Screens

The wells are constructed of 2-inch inner diameter Schedule 40 polyvinyl chloride (PVC) casing with flush-threaded fittings. Each well was installed with a 10-foot nominal length pre-packed dual-wall well screen with 0.010-inch slots. The casings and pre-packed screens arrived pre-cleaned and packaged by the manufacturer. The pre-packed well screen was constructed onsite by packing sand between slotted PVC and the well screen. Well construction materials are sufficiently durable to resist chemical and physical degradation and not interfere with the quality of groundwater samples. Casing and screens are flush-threaded. Solvent or glue was not used to construct the wells. A threaded bottom cap was attached to the bottom of the screen. The PVC products used were American Society for Testing and Materials (ASTM) and National Sanitation Foundation (NSF) rated. Well screen interval details are provided in **Table 1**.

2.4 Well Intake Design

Wells were designed and constructed to: (1) allow sufficient groundwater flow to the well for sampling; (2) minimize the passage of formation materials (turbidity) into the wells; and (3) ensure sufficient structural integrity to prevent collapse of the well. The annular space between the face of the formation and the screen was filled to minimize passage of formation materials into the wells. A filter pack of clean, well-rounded, quartz sand was installed in each well. The 0.01-inch slot size was selected to minimize the inflow of formation material without impairing influent groundwater flow.

2.5 Filter Pack

Highly Pure Quartzite of Southern Products & Silica Co. silica sand filter pack was used as the appropriate gradation for all wells. Highly Pure Quartzite meets the ASTM D5092 uniformity coefficient specification of 2.5 or less, with a uniformity coefficient of 1.6.

Filter pack material was placed within the pre-packed dual-wall well screens and in the annular space between the outside of the pre-pack screen and borehole wall to ensure an adequate thickness of filter pack material between the well and the formation. Filter pack

material placed in the annular space outside of the well screen extended approximately 2 feet above the top of screen. No bridging occurred during filter pack placement.

Upon placement of the filter pack, each well was pumped with a submersible pump to assure settlement of the filter pack. The top of filter pack depth was measured following pumping to ensure appropriate extension of filter sand above the screen. The depth of the top of the filter pack was measured and recorded on the well construction logs provided in **Appendix B**.

2.6 Annular Seal

A minimum of two feet of bentonite pellets (PelPlug time-release coated 3/8" bentonite pellets) were placed immediately above the filter pack by gravity-pouring into the annular space and hydrated per manufacture's specifications. A tremie pipe was used to probe the annular space to ensure that no bridging occurred. If any new well was installed within 15 feet of an existing well, the bentonite seal was brought above the elevation corresponding to the screen top of the nearby well. This was done to prevent grout from entering the water-bearing or screen zone. The bentonite was hydrated with potable water for a duration meeting or exceeding the manufacture's specifications prior to grouting the remaining annulus.

The annulus above the bentonite seal was grouted with Aqua Guard bentonite grout placed via tremie pipe from the top of the bentonite seal. During grouting, care was taken to assure that the bentonite seal was not disturbed by locating the base of the tremie pipe approximately 2 feet above the bentonite seal and injecting grout at low pressure/velocity. A cement apron 4-feet by 4-feet by 4-inches was poured around each well. The pad is mounded slightly outward to direct surface drainage away from the well.

2.7 Cap and Protective Casing

The well risers are fitted with a locking cap and a lockable cover. A one-quarter inch vent hole in the PVC riser pipe provides an avenue for the escape of gas. The protective cap guards the casing from damage and the locking cap serves as a security device to prevent well tampering. Bollards were installed around the four corners of the concrete pad to protect the well.

Wells are clearly marked with signs with the proper designation. A weep hole was drilled in the outer protective casing near the bottom above the concrete pad. Pea gravel was placed inside the protective casing between the riser pipe and the outer casing. Wells are

clearly marked with the proper well identification number on the stand-up casing. Construction details are documented on the well construction logs provided in **Appendix B**.

3. WELL DEVELOPMENT

Wells were developed using a combination of surging and pumping to (1) restore the natural hydraulic conductivity of the formation, and (2) to remove fine-grained sediment to ensure low-turbidity groundwater samples. Wells were alternately surged and purged until visually clear of particulates. Turbidity, pH, temperature, conductivity, oxidation-reduction potential (ORP), and dissolved oxygen (DO) measurements were recorded to ensure that each well was fully developed. The development forms are included in **Appendix C**.

All equipment and tubing placed in the well was decontaminated or disposed of between wells.

4. SURVEY

Upon completion of the well installation, the horizontal locations and vertical elevations were surveyed by CFS. The survey pin installed at each well pad was surveyed to within +/- 0.5-foot horizontal accuracy. Elevations were also measured to the nearest 0.01-foot on the top of the PVC well casing [top of casing (TOC) elevation] and ground surface adjacent to the well pad. Northings and eastings were recorded in feet relative to the North America Datum of 1983 (NAD83). Top of casing and ground surface elevations are in feet relative to NAVD88. Certified survey data are provided in the well construction tables.

5. REFERENCES

- Environmental Resources Management (ERM), 2017. *Well Design, Installation, Development, and Decommissioning Report – Plant Hammond Ash Ponds 1 and 2*. October 2017.
- Georgia Environmental Protection Division (GA EPD), Georgia Department of Natural Resources, 1991. *Manual for Groundwater Monitoring*. September 1991.
- Geosyntec Consultants, 2019a. *Well Design, Installation, and Development Report – Addendum, Plant Hammond Ash Pond 3 (AP-3)*. April 2019.
- Geosyntec Consultants, 2019b. *Well Design, Installation, and Development Report – Addendum, Plant Hammond Ash Ponds 1 and 2 (AP-1 and AP-2)*. June 2019.
- United States Environmental Protection Agency. 2015a. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER]. RIN-2050-AE81, April 2015

TABLE

Table 1
 Summary of Well Construction Details
 Plant Hammond AP-2 and AP-3, Floyd County, Georgia

Well ID	Ash Pond	Purpose	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Ground Surface Elevation ⁽²⁾ (ft MSL)	Top of Nail Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Well Depth (ft bgs) ⁽³⁾
MW-31	3	Water Level Monitoring	11/25/2019	1550422.94	1942688.613	608.60	608.83	611.35	552.60	542.60	66.0
MW-32	3	Water Level Monitoring	11/22/2019	1551094.60	1943021.05	583.07	583.25	585.62	559.27	549.27	33.8
MW-33	2	Water Level Monitoring	11/21/2019	1547975.23	1938411.668	591.06	591.26	593.99	566.06	556.06	35.0

Notes:

ft MSL = feet mean sea level

ft bgs = feet below ground surface

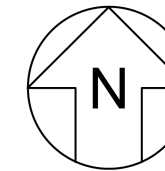
(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet.

(2) Elevation referenced to the North American Vertical Datum of 1988 (NAVD88).



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

FIGURES

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\AP2\AP3 Well Install Rpt\AP3\Figure 1 AP3WellMap.mxd 1/28/2020 7:52:26 AM



LEGEND

-  Compliance Monitoring Well
-  Groundwater Level Monitoring Piezometer

Note:
 1. Aerial photograph source: Google Earth Pro, February 2018.



MONITORING WELL NETWORK MAP

GEORGIA POWER COMPANY
 PLANT HAMMOND AP-3
 FLOYD COUNTY, GEORGIA

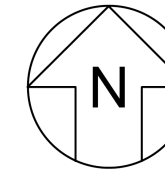
Prepared For:  Georgia Power

Prepared By:  Geosyntec
 consultants




KENNESAW, GA JANUARY 2020

FIGURE
1

N:\GA Power\Plant Hammond\GIS\mxd\Hammond\2019\CCR Reports\AP-2\Second Semi-Annual\Figure 2_WellMap.mxd 1/28/2020 7:17:16 AM



LEGEND

-  Compliance Monitoring Well
-  Delineation Monitoring Well
-  Groundwater Level Monitoring Piezometer

Note:
1. Aerial photograph source: Google Earth Pro, February 2018.

0 150 300 600



SCALE IN FEET

MONITORING WELL NETWORK MAP

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

Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

KENNESAW, GA JANUARY 2020

**FIGURE
2**

APPENDIX A

Well Driller Performance Bonds

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company

, Surety upon

a certain Bond No. 800033976

dated effective 09/27/2017
(MONTH-DAY-YEAR)

on behalf of Ricky Davis / Cascade Drilling, L.P.
(PRINCIPAL)

and in favor of Department of Natural Resources, State of Georgia
(OBLIGEE)

Issued on 9/27/2017
Expires on 6/30/2019
Renewed on 3/4/2019
Expires on 6/30/2021

does hereby continue said bond in force for the further period

beginning on 06/30/2019
(MONTH-DAY-YEAR)

and ending on 06/30/2021
(MONTH-DAY-YEAR)

Amount of bond Thirty Thousand and 00/100 Dollars (\$30,000.00)

Description of bond Performance Bond for Water Well Contractors

Premium: \$1200.00

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on March 4th, 2019
(MONTH-DAY-YEAR)

Atlantic Specialty Insurance Company

By Andrew P. Larsen
Attorney-in-Fact Andrew P. Larsen

Parker, Smith & Feek, Inc.

Agent

2233 112th Ave NE Bellevue, WA 98004

Address of Agent

425-709-3600

Telephone Number of Agent

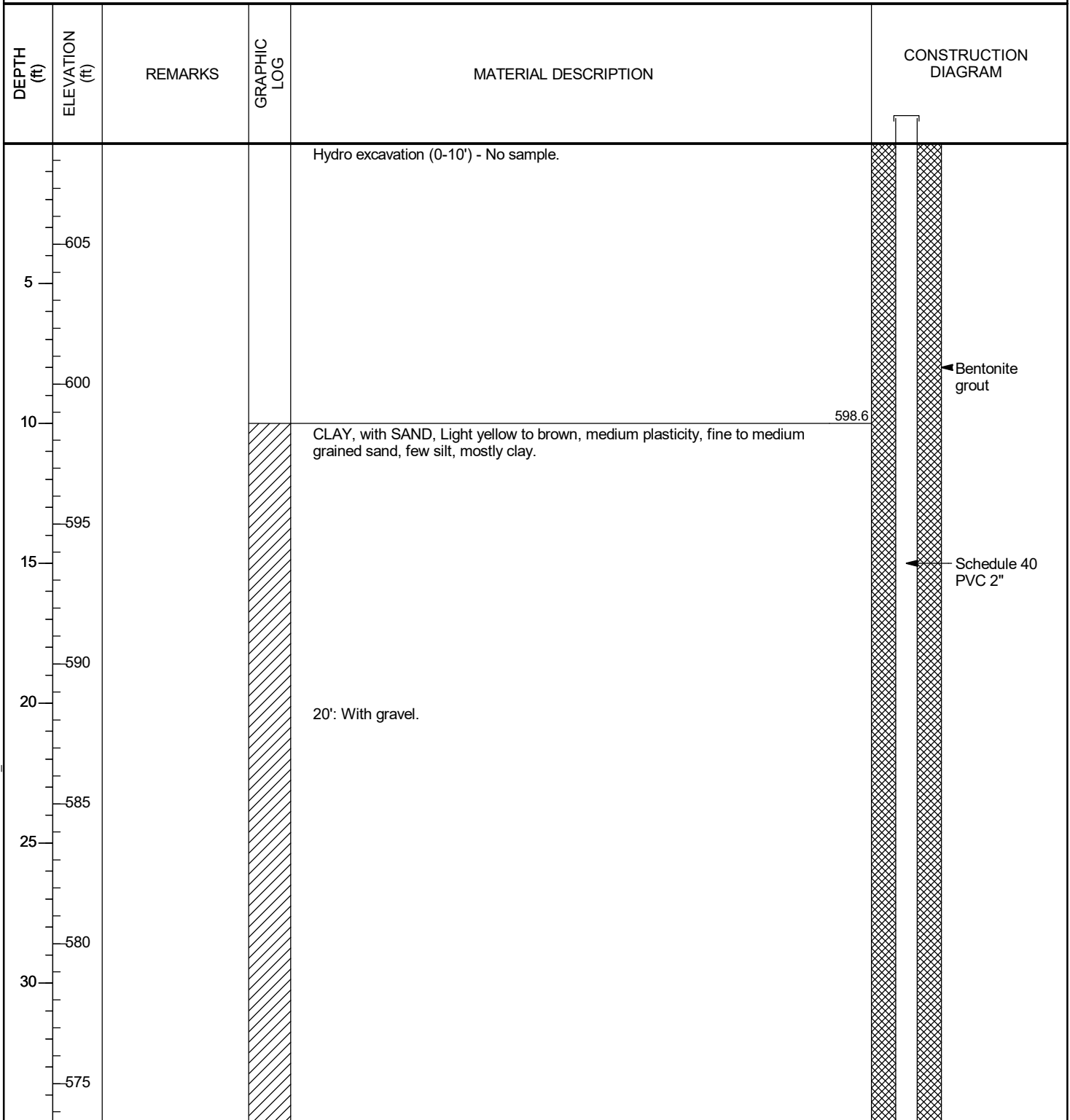


APPENDIX B

Boring and Well Construction Logs

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>11/25/19</u> COMPLETED <u>11/26/19</u>	NORTHING <u>1550422.94 ft</u> EASTING <u>1942688.61 ft</u>
DRILLER <u>SCS Field Services</u>	GROUND ELEVATION <u>608.6 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>611.35 ft</u>
SAMPLING METHOD <u>Core Barrel (4")</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Sonic TS-150</u>	LOGGED BY <u>B. Weinmann</u> CHECKED BY <u>J. Ivanowski</u>

SCS MONITORING WELLS PLANT HAMMOND MW31 TO MW33 DECEMBER 2019.GPJ ACP GINT LIBRARY CH.GLB 1/10/20



(Continued Next Page)

CLIENT Southern Company Services **PROJECT NAME** Plant Hammond Well Installation
PROJECT NUMBER GW6581B **PROJECT LOCATION** Plant Hammond

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
35				CLAY, with SAND, Light yellow to brown, medium plasticity, fine to medium grained sand, few silt, mostly clay. (continued)	
40	570				
45	565			CLAY with SAND, light gray and yellow to red, medium plasticity, sand is fine grained, laminated, stiff, moist.	
50	560			54': With rock fragments, fine to medium grained sand, brown to gray.	
55	555			PARTIALLY WEATHERED ROCK (PWR), Gray, fine to coarse gravel sized limestone fragments and fine to medium grained sand.	
60	550				
65	545			LIMESTONE, Pale gray, limestone.	

Bottom of borehole at 66.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW31 TO MW33 DECEMBER 2019.GPJ ACP GINT LIBRARY CH.GLB 1/10/20

← Bentonite 3/8" chips

← 20/40 Silica Sand
0.010 slot size
2" Pre Pack,
U-Pack
Screen

CLIENT Southern Company Services	PROJECT NAME Plant Hammond Well Installation
PROJECT NUMBER GW6581B	PROJECT LOCATION Plant Hammond
DATE STARTED 11/22/19 COMPLETED 11/26/19	NORTHING 1551094.6 ft EASTING 1943021.05 ft
DRILLER SCS Field Services	GROUND ELEVATION 583.07 ft BORING DIAMETER 8 in
DRILLING METHOD HSA + Rock Coring (NQ)	TOP OF CASING ELEVATION 585.62 ft
SAMPLING METHOD SPT	GEOPHYSICAL CONTRACTOR ---
RIG TYPE CME 550	LOGGED BY N.Tilahun CHECKED BY J. Ivanowski

SCS MONITORING WELLS PLANT HAMMOND MW31 TO MW33 DECEMBER 2019.GPJ ACP GINT LIBRARY CH.GLB 1/10/20

DEPTH (ft)	ELEVATION (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
				0-9': Hand auger.		Top soil	
	580					GRAVELLY CLAY, Light brown, low plasticity, gravel is fine grained, angular, trace fine to coarse sand and silt, medium dense, moist. 3': Reddish brown to dark brown.	
5						CLAY, Brown, medium plasticity, trace fine sand and silt, firm, moist.	
	575			9-28.3': Hollow stem auger.		9 - 13.5': No sample.	
10							
	570					CLAY, Brown, medium plasticity, trace angular gravel, few fine sand, firm, moist.	
15		89	2-2-2 (4)			15 - 18.5': No sample.	
	565						
		89	0-0-0 (-)	18.5-20': Weight of hammer.		CLAY, Light brown, high plasticity, very soft, laminated, wet.	
20		100	0-0-0 (-)	20-21.5': Weight of hammer.			
		100	3-2-2 (4)			From 21.5': Dark brown, with weathered limestone fragments, laminated, soft, moist to wet.	
	560						
		22	0-1-1 (2)				

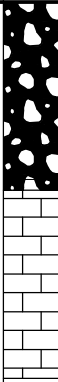
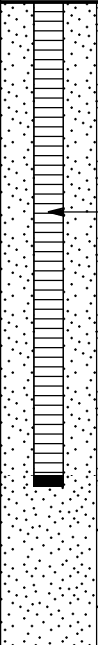
(Continued Next Page)

CLIENT Southern Company Services

PROJECT NAME Plant Hammond Well Installation

PROJECT NUMBER GW6581B

PROJECT LOCATION Plant Hammond

DEPTH (ft)	ELEVATION (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
25		67	30-40-30 (70)	From 28.3': Coring.		PARTIALLY WEATHERED ROCK (PWR), Gray, fine to coarse gravel sized limestone fragments, very hard, wet. (continued)	
		17	50/3" (-)			LIMESTONE, Dark gray, thinly bedded, hard, slightly weathered, with light gray to white calcite filled veins.	
555		17	50/3" (-)			32 - 37': Void.	
30							0.010 slot size 2" Pre Pack, U-Pack Screen
550							
35							

Bottom of borehole at 37.0 feet.

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>11/21/19</u> COMPLETED <u>11/22/19</u>	NORTHING <u>1547975.23 ft</u> EASTING <u>1938411.67 ft</u>
DRILLER <u>SCS Field Services</u>	GROUND ELEVATION <u>591.06 ft</u> BORING DIAMETER <u>8 in</u>
DRILLING METHOD <u>HSA</u>	TOP OF CASING ELEVATION <u>593.99 ft</u>
SAMPLING METHOD <u>SPT</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>CME 550</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>

SCS MONITORING WELLS PLANT HAMMOND MW31 TO MW33 DECEMBER 2019.GPJ ACP GINT LIBRARY CH.GLB 1/8/20

DEPTH (ft)	ELEVATION (ft msl)	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
590					Hydro excavation (0-10') - No sample.	
585						
10	580				10-13.5': No Sample.	
15		33	4-8-9 (17)		GRAVELLY CLAY, Brown, low to medium plasticity, gravel is angular to subangular, stiff, trace sand and silt, moist.	← Bentonite grout
					15-18.5': No sample.	← Schedule 40 PVC 2"
575						
		78	14-6-6 (12)		GRAVELLY CLAY, Brown, low to medium plasticity, gravel is angular to subangular, stiff, trace sand and silt, moist.	
					SILT, Brown, low to medium plasticity, trace fine sand, firm to stiff, with some clay, moist.	

(Continued Next Page)

CLIENT Southern Company Services **PROJECT NAME** Plant Hammond Well Installation
PROJECT NUMBER GW6581B **PROJECT LOCATION** Plant Hammond

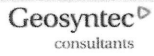
DEPTH (ft)	ELEVATION (ft msl)	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
20					SILT, Brown, low to medium plasticity, trace fine sand, firm to stiff, with some clay, moist. <i>(continued)</i> 20': Firm to stiff. 23': Firm.	<p>Bentonite 3/8" chips</p>
	570	67	5-4-5 (9)			
		100	5-4-6 (10)			
		100	3-3-3 (6)			
25					CLAY, Brown with black mottles, medium to high plasticity, trace silt, trace fine sand, stiff, wet. 27.5': Firm.	<p>20/40 Silica Sand 0.010 slot size 2" Pre Pack, U-Pack Screen</p>
	565	100	4-6-7 (13)			
		78	6-7-8 (15)			
		100	2-4-4 (8)		29': Light brown to light gray.	
30					30.5': Light brown to light gray, stiff. CLAYEY SAND, Gray to brown, fine grained, poorly graded, medium dense, moist to wet. GRAVELLY CLAY, Light brown to brown, medium to high plasticity, gravel is angular to subrounded, stiff, moist to wet.	
	560	100	4-6-6 (12)			
		89	4-5-6 (11)			
		100	4-4-7 (11)			
35						
		89	7-6-4 (10)			

Bottom of borehole at 35.0 feet.

APPENDIX C

Well Development Forms

WELL
DEVELOPMENT



GROUNDWATER SAMPLING LOG SHEET

Client: SCS/GA Power
 Site: Plant Hammond
 Well ID: MW-31
 Total Depth (ft): 66'
 Depth to Water (ft): 41.56
 Well Diameter (in): _____
 Well Volume (gal) = 0.041d²h: _____
 Well Volume (L) = gal * 3.785: _____

Project No.: GW6581
 Location: A7-3
 Pump Type/Model: Aqua Saor
 Tubing Material: Polyethylene
 Pump Intake Depth (ft): _____
 Start/Stop Purge Time: _____
 Purge Rate (mL/min): _____
 Total Purge Volume (L): _____

Sampling Date: 12/10/19
 Sampler's Name: B. Weinmann
 Sample Collection Time: 11:46
 Sample Purge Rate (mL/min): _____
 Sample ID: _____
 Laboratory Analyses: _____

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

Purge Method: Low-Flow Well Volume Other: _____ QA/QC Collected? _____
 Sampling Method: Pump Discharge Other: _____ QA/QC I.D. _____

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.)
1:13	7.38	865.0	158.5	2.96	14.55	10.45			35 L	Pump at 65'
1:50	7.31	793.5	88.0	8.86	14.43	14.24			66 L	Pump at 60'
1:55	7.21	778.9	23.8	10.00	15.38	8.50			70 L	Pump at 60'
2:24	7.26	702.7	73.7	2.88	14.38	28.60			93 L	Pump at 55'
2:37	7.27	783.4	65.3	3.20	14.05	11.20				Pump at 55'
2:41	7.24	764.5	56.3	2.72	15.91	8.44				Pump at 55'
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	

WELL
DEVELOPMENT

Geosyntec consultants
GROUNDWATER SAMPLING LOG SHEET

Client: GA Power Project No.: GW0581 Sampling Date: 12/11/19
 Site: Plant Hammond Location: A#-3 (across tanks) Sampler's Name: B. Weinmann
 Well ID: MW-32 Pump Type/Model: Manson Sample Collection Time: _____
 Total Depth (ft): 36.69 Tubing Material: Polystyrene Sample Purge Rate (mL/min): _____
 Depth to Water (ft): 19.39' Pump Intake Depth (ft): _____ Sample ID: _____
 Well Diameter (in): _____ Start/Stop Purge Time: _____ Laboratory Analyses: _____
 Well Volume (gal) = 0.041d²h: _____ Purge Rate (mL/min): _____ Total Purge Volume (L): _____
 Well Volume (L) = gal * 3.785: _____ Purge Method: Low-Flow Well Volume Other: _____ QA/QC Collected? _____
 Sampling Method: Pump Discharge Other: _____ QA/QC I.D. _____

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 btoe)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
11:53	6.46	918.1	110.1	2.01	18.55	30.49			15	35' surge at start
12:02	6.97	897.5	105.6	2.22	17.61	21.77			29	33'
12:14	6.92	874.6	104.0	2.20	17.74	13.61			43	"
12:19	6.95	895.5	103.1	2.16	17.08	10.17			49	"
12:21	6.93	897.3	103.0	2.90	16.59	9.51			54	"
12:38	6.98	904.0	97.1	1.95	16.58	51.58			76	Surge at 12:25
12:44	6.99	898.6	98.0	2.02	17.01	21.81			85	"
12:49	6.92	911.3	96.5	2.19	17.21	14.47			91	"
12:53	6.91	912.9	95.5	1.97	17.48	9.75			99	"
1:02	6.99	832.4	94.5	3.23	15.96	8.02			112	" Surge at 1:08
1:21	7.00	876.2	92.3	2.77	18.00	45.00			125	"
1:28	7.03	911.5	92.9	3.89	16.56	19.49			136	"
1:34	7.00	800.2	92.4	2.83	17.57	9.44			147	
1:40	6.93	914.1	92.1	6.19	17.21	7.84			153	
1:44	6.94	918.5	91.5	2.14	16.94	5.95			160	
1:47	6.90	924.8	90.4	2.77	16.86	5.25			167	
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	

WELL DEVELOPMENT



GROUNDWATER SAMPLING LOG SHEET

Client: GA + Power
 Site: Plant Hammond
 Well ID: MW-33
 Total Depth (ft): 30.5'
 Depth to Water (ft): 24.73
 Well Diameter (in): _____
 Well Volume (gal) = 0.041d²h: _____
 Well Volume (L) = gal * 3.785: _____
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

Project No.: _____
 Location: Plant # A-2
 Pump Type/Model: Monsieur
 Tubing Material: Polyethylene
 Pump Intake Depth (ft): _____
 Start/Stop Purge Time: _____
 Purge Rate (mL/min): _____
 Total Purge Volume (L): _____

Sampling Date: 12/10/19
 Sampler's Name: B. Weinmann
 Sample Collection Time: 15:30 begin
 Sample Purge Rate (mL/min): _____
 Sample ID: _____
 Laboratory Analyses: _____

Purge Method: Low-Flow Well Volume Other: _____ QA/QC Collected? _____
 Sampling Method: Pump Discharge Other: _____ QA/QC I.D. _____

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.)
3:45	6.17	2967.3	77.4	7.8	14.87	17.58			~24L	
3:51	5.38	2970.5	83.1	9.28	15.64	8.43			~31L	Pump at 37'
4:01	5.08	2957.1	90.1	8.00	14.85	32.42			~47L	32' surge
4:10	4.99	2943.7	99.0	3.69	15.93	9.75			~61L	32' surge
4:20	4.92	3004.7	97.7	2.12	14.86	29.11			~82L	32' began spilling 200'
9:30	6.14	3218.3	164.9	2.30	7.11	12.00	24.14		~55L	33'
9:50	4.81	2951.5	161.4	4.43	13.76	1.42			3# 49L	33' surge) whole screen
10:02	4.68	2929.0	149.2	2.47	14.02	19.60			60L	30'
10:17	4.66	2023.7	145.7	3.05	15.19	7.29			70L	30'
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	

12/10/19

APPENDIX A3

Updated Boring and Well Construction Logs



LOG OF TEST BORING

BORING HGWA-122
(AP03-MW22)
 PAGE 1 OF 1
 ECS37736

SOUTHERN COMPANY SERVICES, INC.
 EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
 LOCATION Plant Hammond

N:1551251.42 E:1941887.11

DATE STARTED 11/20/2014 COMPLETED 11/20/2014 SURF. ELEV. 585.04 (585.2) COORDINATES: (N:34.258707) (E:-85.340534)

CONTRACTOR SCS Field Services EQUIPMENT CME 550 METHOD Hollow Stem Auger; HQ Rock Core

DRILLED BY T. Milam LOGGED BY W. Shaughnessy CHECKED BY L. Millet ANGLE _____ BEARING _____

BORING DEPTH 25.2 ft. GROUND WATER DEPTH: DURING 15 ft. COMP. _____ DELAYED 11.1 ft. after 100 hrs.

NOTES Well installed. Refer to well data sheet.

2012 GEOTECH ENGINEERING LOGS - ESEE2012DATABASE.GDT - 7/13/15 10:23 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\GA-HAMMOND\HAMMOND PZ BORING L

DEPTH (ft) GRAPHIC LOG	STRATA DESCRIPTION ELEV.	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N-VALUE)	COMMENTS
				PERCENT RECOVERY (RQD)	
5	Clayey Sand (SC) - yellow-brown, dry, medium dense, medium to coarse grain, with yellow-red mottling 577.04 (577.2)	SS-1	3.5-5.0	3-7-5 (12)	
	Lean Clay (CL) - yellow-brown, damp, stiff, no to low plasticity, with red-yellow mottling, some sand 572.04 (572.2)	SS-2	8.5-10.0	7-7-5 (12)	
	Fat Clay (CH) - brown, wet, soft, gravelly, angular gravel, weathered bedrock 566.74 (566.9)	SS-3	13.5-15.0	2-2-1 (3)	
20	SHALEY LIMESTONE - gray and dark gray, few weathered shale seams 1/8 to 1/4 inch thick, strong HCl reaction - shale seams thicker (up to 1 inch thick) and less weathered 555.84 (560.0)	RC-1	18.3-20.2	89 (21)	Auger refusal at 18.3 ft.
		RC-2	20.2-25.2	96 (24)	

Bottom of borehole at 25.2 feet.

Easting and Northing in NAD 83.
 Elevation in NAVD 88.

2012 WELL CONSTRUCTION RCRD (NO COM) - ESEE DATABASE:GDT - 7/8/15 13:11 - S:\WORKGROUP\PSAPC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\GA-HAMMOND\HAMMOND ASH POND PIEZOMETER HAMMOND PZ BORING

Record of Well Construction revised with new ID and survey data dated 5/19/2020.
Original well ID and survey data in parenthesis.



RECORD OF WELL CONSTRUCTION

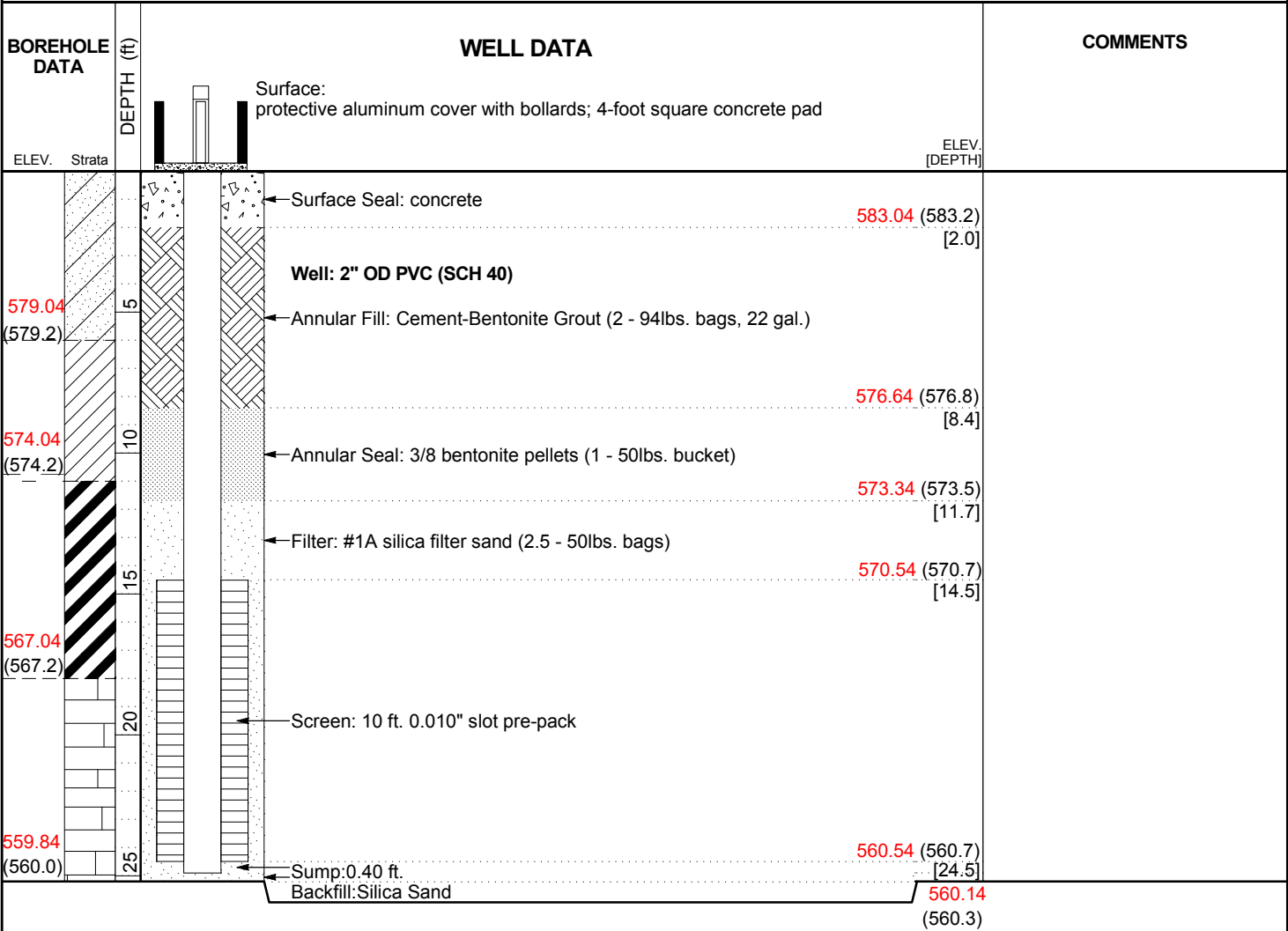
WELL: HGWA-122
(AP03-MW22)
PAGE 1 OF 1
ECS37736

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Hammond

N:1551251.42 E:1941887.11

DATE STARTED 11/20/2014 COMPLETED 11/20/2014 SURF. ELEV. 585.04 (585.2) COORDINATES: (N:34.258707) (E:-85.340534)
 CONTRACTOR SCS Field Services EQUIPMENT CME 550 METHOD Hollow Stem Auger; HQ Rock Core
 DRILLED BY T. Milam LOGGED BY W. Shaughnessy CHECKED BY L. Millet ANGLE _____ BEARING _____
 BORING DEPTH 25.2 ft. GROUND WATER DEPTH: DURING 15 ft. COMP. _____ DELAYED 11.1 ft. after 100 hrs.
 NOTES Well installed. Refer to well data sheet.



Easting and Northing in NAD 83.
Elevation in NAVD 88.



BORING LOG

BORING HGWC-120

(P-20)

PAGE 1 OF 2

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Hammond

LOCATION Rome, GA

DATE STARTED 6/27/2016 COMPLETED 6/27/2016 SURF. ELEV. 602.83 COORDINATES: N: 1551067.24 E: 1942926.62

CONTRACTOR Cascade EQUIPMENT _____ METHOD Rotosonic

DRILLED BY T. Ardito LOGGED BY W. Newton CHECKED BY _____

BORING DEPTH 67 ft. GROUND WATER DEPTH DURING 47 ft. COMP. 42.6 ft. DELAYED 42.6 ft.

NOTES Begin Engineering Log at 47 ft. Well installed. Refer to well data sheet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 1/4/17 08:35 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\HAMMOND AP-3.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	Natural Gamma			WELL DATA	
			75	150	225		
						Top of casing Elev. = 605.82 ft	
		Topsoil (TOPSOIL) Elev: 602.83				 Surface Seal	
5		Lean Clay (CL) Elev: 559.83					
10		Gravelly Lean Clay (CLG) mottled					
15		Low Plastic Organic Silt or Clay (OL) Lean Clay (CL)					
20		Coal Combustion Byproduct (ASH) Lean Clay (CL) Elev: 575.83					
30		Gravelly Lean Clay (CLG) Elev: 571.83					
35		Gravelly Lean Clay (CLG) Elev: 565.83					
40		Fat Clay (CH)					
							 Annular Fill

(Continued Next Page)



BORING LOG

BORING HGWC-120
(P-20)

PAGE 2 OF 2

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Hammond

LOCATION Rome, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	Natural Gamma			WELL DATA
			75	150	225	
		Elev:				Top of casing Elev. = 605.82
45		Fat Clay (CH)(Con't)				Annular Fill
		555.83				
50		DOLOSTONE CLS				Annular Seal
		552.83				
55		DOLOSTONE				Filter Pack
		548.83				Screen top elevation: 548.83
60						
65						Screen bottom Elevation: 538.83
		535.83				

Bottom of borehole at 67.0 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 1/4/17 08:35 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\HAMMOND AP-3.GPJ

Easting and Northing in NAD 83.
Elevation in NAVD 88.



ERM
 3200 Windy Hill Rd Ste 1500W
 Atlanta, GA 30339
 Telephone: 678-486-2700

WELL NUMBER HGWC-121A

CLIENT Southern Company Services, Inc. **PROJECT NAME** Plant Hammond
PROJECT NUMBER 0372394 **PROJECT LOCATION** Ash Disposal Site #3
DATE STARTED 7/17/17 **COMPLETED** 7/17/17 **GROUND ELEVATION** 582.31 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Southern Company Services, Inc **COORDINATES** N: 1550607.97 E: 1943030.44
DRILLING METHOD Hollow Stem Auger 2" **AT TIME OF DRILLING** 13.20 ft
LOGGED BY WV **CHECKED BY** GEJ **AT END OF DRILLING** ---
NOTES 24hrs AFTER DRILLING 11.50 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Elev: 582.31 Top of casing elevation: 584.69 Casing Type: 2" PVC
5	SS	70	CL-ML		(CL-ML) Silty CLAY: reddish with yellow mottling, some large angular gravel, medium stiff, low plasticity, dry	
10	SS	63	CL		(CL) CLAY: reddish with yellow mottling, some gravel, medium dense, low plasticity, dry	
15	SS	80	CL		(CL) CLAY: gray, some coarse sand, medium dense, moderate plasticity, moist	
20	SS	78	CL		(CL) SAA	
25	SS	53	CL		(CL) SAA, wet	← bentonite
30	SS	32	CL		(CL) CLAY, gray/brown, some gravel, wet	Top screen elevation: 556.71
35	SS	0			No recovery	← 20/30 sand UPACK ← 0.01 slot screen
						Bottom screen elevation: 546.71

Bottom of borehole at 35.6 feet.

Easting and Northing in NAD 83.
 Elevation is NAVD 88.

2012 GEOTECH ENGINEERING LOGS - ESEE2012DATABASE.GDT - 7/13/15 10:24 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\GA-HAMMOND\HAMMOND PZ BORING L

Log of Test Boring revised with new well ID and survey data dated 5/19/2020.
Original well ID and survey data in parenthesis.



LOG OF TEST BORING

BORING HGWC-124
(AP03-MW24)
PAGE 1 OF 1
ECS37736

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Hammond

N:1551624.93 E:1942781.05

DATE STARTED 11/13/2014 COMPLETED 11/13/2014 SURF. ELEV. 579.80 (579.7) COORDINATES: (N:34.259753) (E:-85.337596)

CONTRACTOR SCS Field Services EQUIPMENT CME 550 METHOD Hollow Stem Auger; HQ Rock Core

DRILLED BY T. Milam LOGGED BY W. Shaughnessy CHECKED BY L. Millet ANGLE _____ BEARING _____

BORING DEPTH 32.5 ft. GROUND WATER DEPTH: DURING 15 ft. COMP. _____ DELAYED 14.2 ft. after 24 hrs.

NOTES Well installed. Refer to well data sheet.

DEPTH (ft) GRAPHIC LOG	STRATA DESCRIPTION ELEV.	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N-VALUE)	COMMENTS
				PERCENT RECOVERY (RQD)	
	Fill (ML) - red-yellow, dry, very stiff, clayey, with pale brown mottling 573.80 (573.7)	SS-1	3.5-5.0	8-8-9 (17)	Auger refusal at 21.7 ft.
	Silty Clay (CL) - brown-yellow and brown, dry, stiff, with black mottling 562.80 (562.7)	SS-2	8.5-10.0	5-3-5 (8)	
	- brown-yellow and brown, dry, medium stiff, with black mottling 558.10 (558.0)	SS-3	13.5-15.0	2-3-2 (5)	
	Clayey Gravel (GC) - brown, wet, very loose, with pale yellow-brown mottling 547.30 (547.2)	SS-4	18.5-20.0	2-2-2 (4)	
	SHALEY LIMESTONE - inclined, separates at shale bedding planes, brown-red iron staining, strong to weak HCl reaction, medium grained pyrite (Dark gray and gray Formation)	RC-1	21.7-25.1	94 (0)	
		RC-2	25.1-30.1	96 (36)	

Bottom of borehole at 32.5 feet.

Eastings and Northing in NAD 83.
Elevation in NAVD 88.

2012 WELL CONSTRUCTION RCRD (NO COM) - ESEE DATABASE.GDT - 7/8/15 13:11 - S:\WORKGROUP\SPC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\GA-HAMMOND\HAMMOND ASH POND PIEZOMETER HAMMOND PZ BORING



RECORD OF WELL CONSTRUCTION

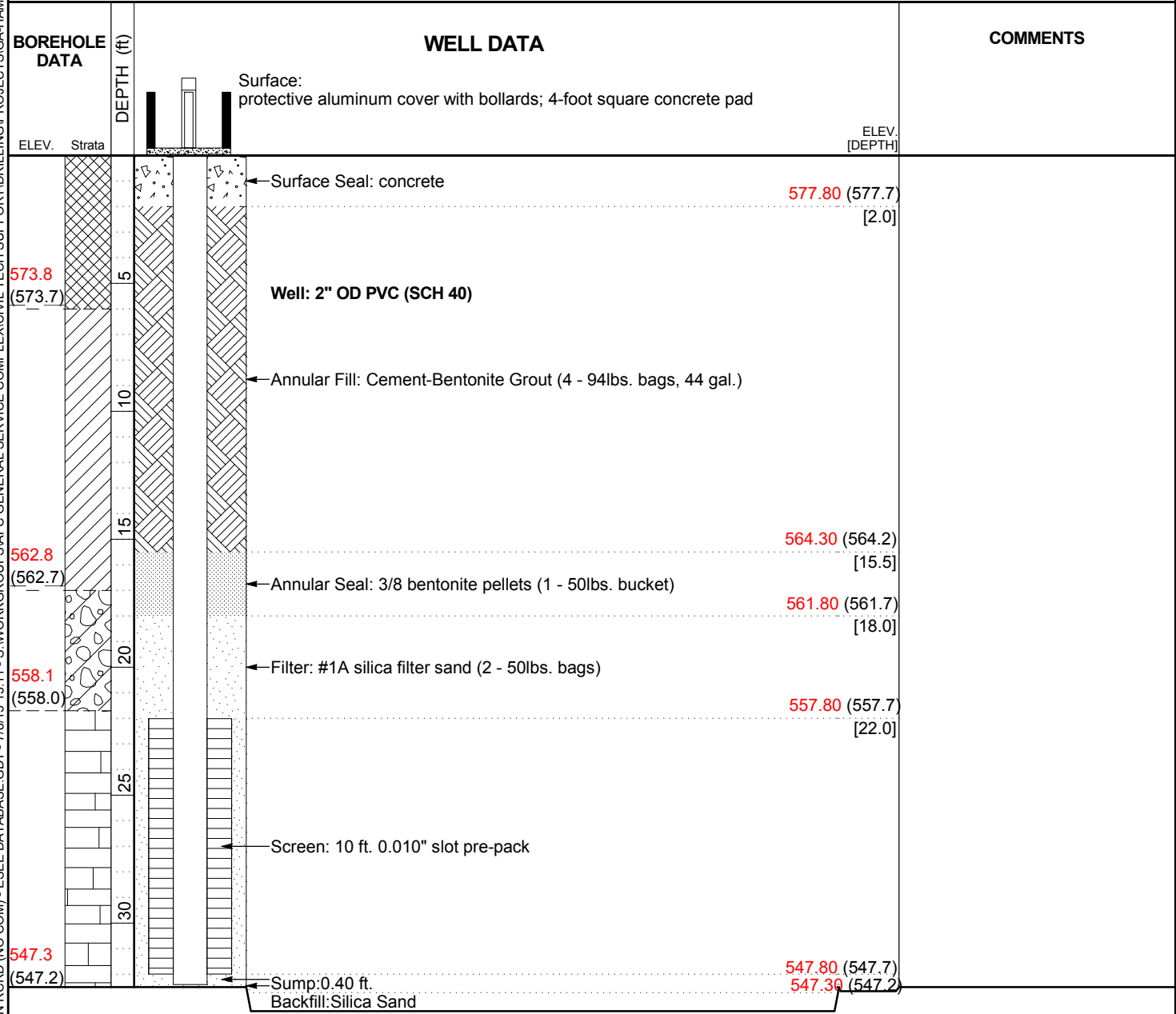
WELL: HGWC-124
(AP03-MW24)
 PAGE 1 OF 1
 ECS37736

SOUTHERN COMPANY SERVICES, INC.
 EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
 LOCATION Plant Hammond

N: 1551624.93 E: 1942781.05

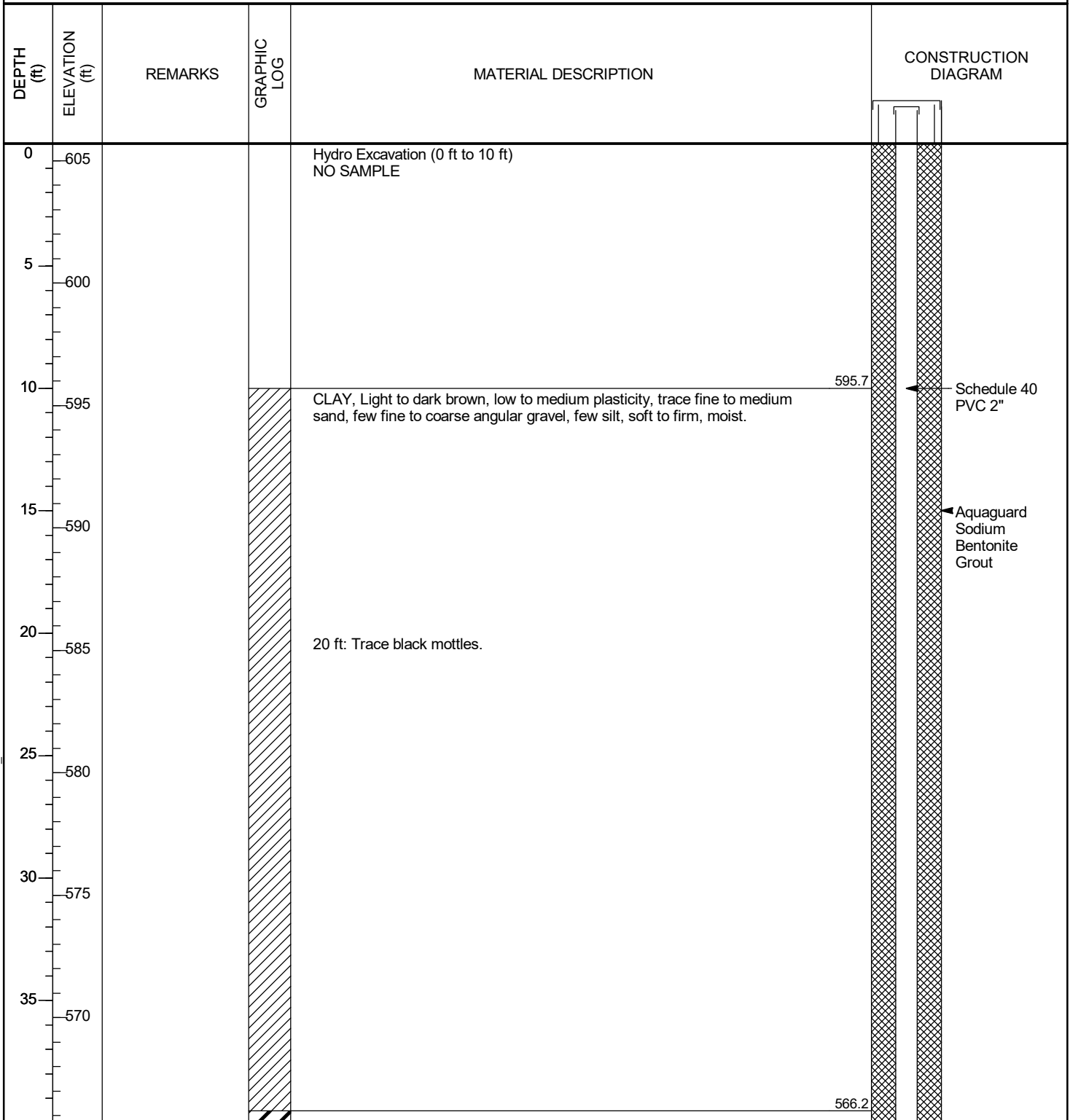
DATE STARTED 11/13/2014 COMPLETED 11/13/2014 SURF. ELEV. 579.80 (579.7) COORDINATES: (N:34.259753) (E:-85.337596)
 CONTRACTOR SCS Field Services EQUIPMENT CME 550 METHOD Hollow Stem Auger; HQ Rock Core
 DRILLED BY T. Milam LOGGED BY W. Shaughnessy CHECKED BY L. Millet ANGLE _____ BEARING _____
 BORING DEPTH 32.5 ft. GROUND WATER DEPTH: DURING 15 ft. COMP. _____ DELAYED 14.2 ft. after 24 hrs.
 NOTES Well installed. Refer to well data sheet.



Eastings and Northing in NAD 83.
 Elevation in NAVD 88.

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/4/20</u> COMPLETED <u>5/4/20</u>	NORTHING <u>1550821.41 ft</u> EASTING <u>1942962.87 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>605.70 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>608.89 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>

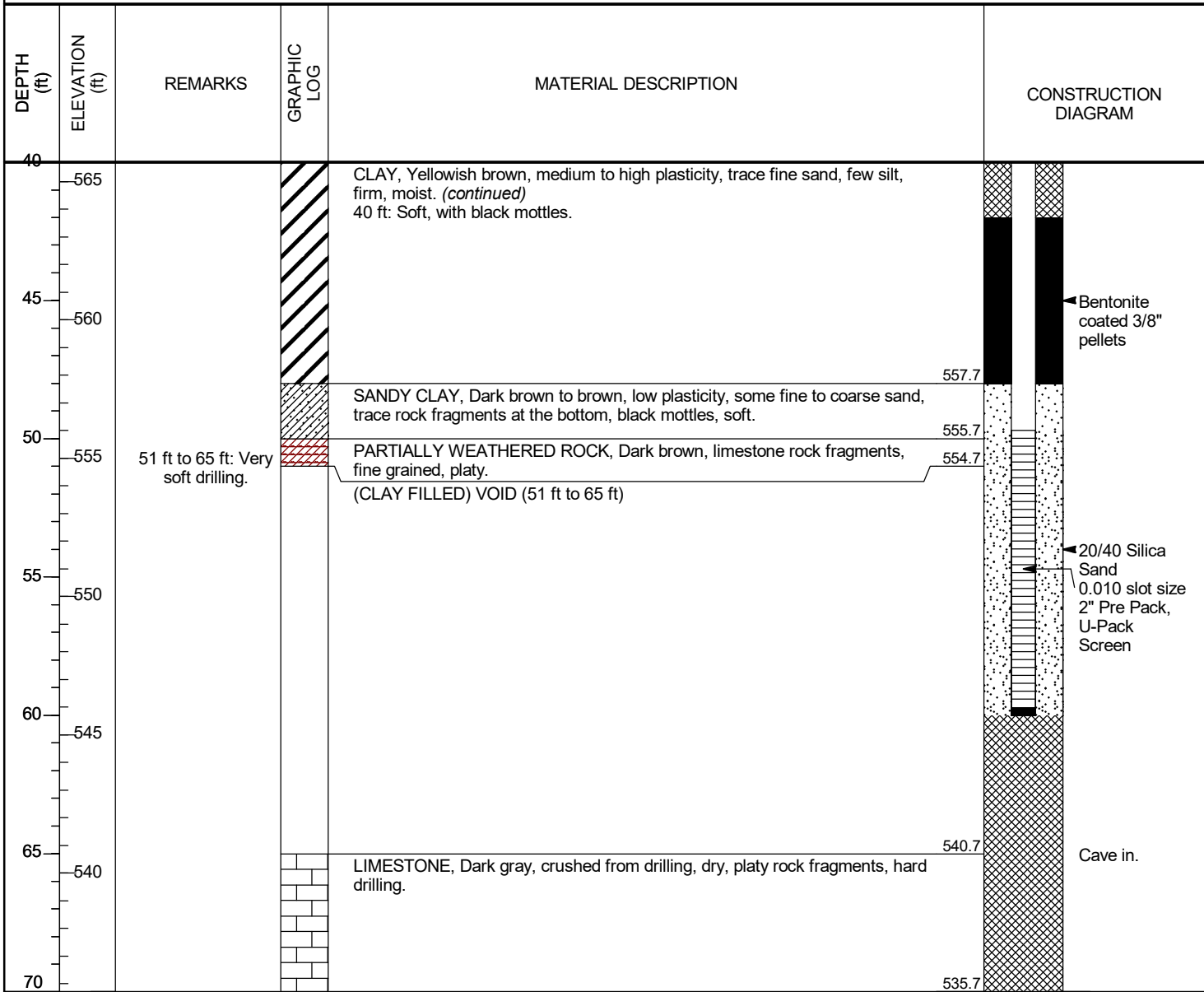
SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41 MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20



(Continued Next Page)

CLIENT Southern Company Services **PROJECT NAME** Plant Hammond Well Installation

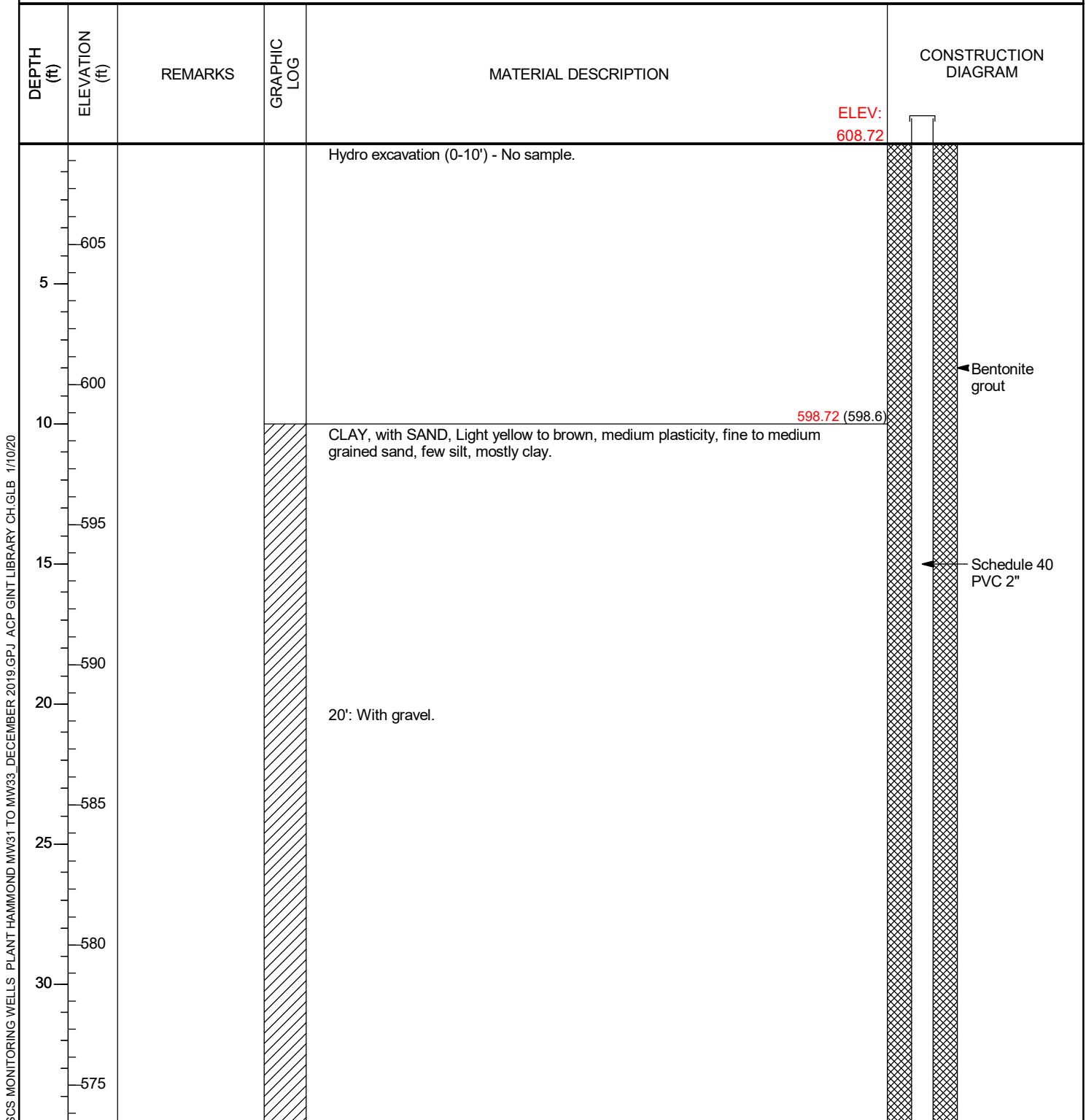
PROJECT NUMBER GW6581B **PROJECT LOCATION** Plant Hammond



Bottom of borehole at 70.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41, MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>11/25/19</u> COMPLETED <u>11/26/19</u>	NORTHING <u>1550422.03</u> (1550422.94) EASTING <u>1942689.40</u> (1942688.61)
DRILLER <u>SCS Field Services</u>	GROUND ELEVATION <u>608.72</u> (608.6) BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>611.24</u> (611.35)
SAMPLING METHOD <u>Core Barrel (4")</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Sonic TS-150</u>	LOGGED BY <u>B. Weinmann</u> CHECKED BY <u>J. Ivanowski</u>



CLIENT Southern Company Services **PROJECT NAME** Plant Hammond Well Installation
PROJECT NUMBER GW6581B **PROJECT LOCATION** Plant Hammond

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
35				CLAY, with SAND, Light yellow to brown, medium plasticity, fine to medium grained sand, few silt, mostly clay. (continued)	
	570				
40					
	565			CLAY with SAND, light gray and yellow to red, medium plasticity, sand is fine grained, laminated, stiff, moist.	
45					
	560				
50				54': With rock fragments, fine to medium grained sand, brown to gray.	
	555				
55				PARTIALLY WEATHERED ROCK (PWR), Gray, fine to coarse gravel sized limestone fragments and fine to medium grained sand.	
	550				
60					
	545			LIMESTONE, Pale gray, limestone.	
65					
	542.72				

Bottom of borehole at 66.0 feet.

← Bentonite 3/8" chips

← 20/40 Silica Sand
0.010 slot size
2" Pre Pack,
U-Pack
Screen

SCS MONITORING WELLS PLANT HAMMOND MW31 TO MW33 DECEMBER 2019.GPJ ACP GINT LIBRARY CH.GLB 1/10/20

Easting and Northing in NAD 83.
Elevation in NAVD 88.

2012 WELL CONSTRUCTION RCRD (NO COM) - ESEE DATABASE: GDT - 7/8/15 13:11 - S:\WORKGROUP\SPAC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\GA-HAMMOND\HAMMOND ASH POND PIEZOMETER HAMMOND PZ BORING

Record of Well Construction revised with survey data dated 5/19/2020.
Original survey data in parenthesis.



RECORD OF WELL CONSTRUCTION

WELL: AP03-MW21
PAGE 1 OF 1
ECS37736

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Hammond

N: 1550270.15 E: 1941809.76

DATE STARTED 12/2/2014 COMPLETED 12/3/2014 SURF. ELEV. 583.60 (583.7) COORDINATES: (N:34.256004) (E:-85.340776)
 CONTRACTOR SCS Field Services EQUIPMENT CME 550 METHOD Hollow Stem Auger; HQ Rock Core
 DRILLED BY T. Milam LOGGED BY W. Shaughnessy CHECKED BY L. Millet ANGLE _____ BEARING _____
 BORING DEPTH 24.4 ft. GROUND WATER DEPTH: DURING 5 ft. COMP. _____ DELAYED 6.4 ft. after 24 hrs.
 NOTES Well installed. Refer to well data sheet.

BOREHOLE DATA	DEPTH (ft)	WELL DATA	COMMENTS
ELEV. Strata			ELEV. [DEPTH]
		<p style="text-align: center;">Top of Casing Elev: 586.27 Surface: protective aluminum cover with bollards; 4-foot square concrete pad</p>	
		← Surface Seal: concrete	581.60 (581.7)
		← Well: 2" OD PVC (SCH 40)	[2.0]
		← Annular Fill: Cement-Bentonite Grout (1 - 94lbs. bags, 11 gal.)	580.00 (580.1) [3.6]
577.60 (577.7)	5	← Annular Seal: 3/8 bentonite pellets (1 - 50lbs. bucket)	
			573.10 (573.2) [10.5]
		← Filter: #1A silica filter sand (4 - 50lbs. bags)	570.40 (570.5) [13.2]
567.60 (567.7)	10		
564.20 (564.3)	15	← Screen: 10 ft. 0.010" slotted	
			560.40 (560.5) [23.2]
559.20 (559.3)	20	← Sump: 0.40 ft. ← Backfill: caved material	560.00 (560.1) [23.6]

Easting and Northing in NAD 83.
Elevation in NAVD 88.

2012 WELL CONSTRUCTION RCRD (NO COM) - ESEE DATABASE.GDT - 7/8/15 13:11 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\GA-HAMMOND\HAMMOND ASH POND PIEZOMETER HAMMOND PZ BORING



RECORD OF WELL CONSTRUCTION

WELL: AP03-MW23
PAGE 1 OF 1
ECS37736

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Hammond

N:1551641.44 E:1942496.83

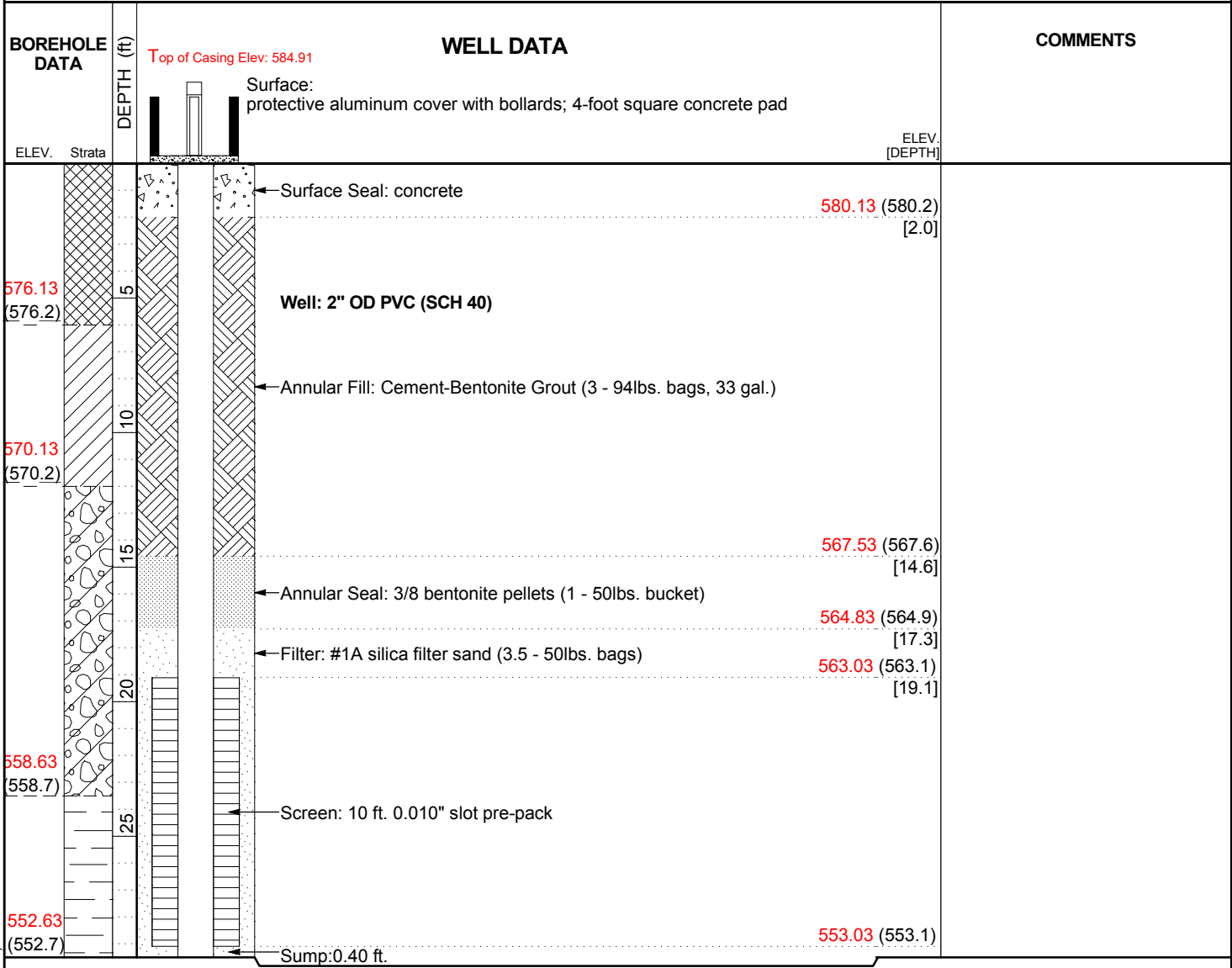
DATE STARTED 11/24/2014 COMPLETED 11/24/2014 SURF. ELEV. 582.13 (582.2) COORDINATES: (N:34.259796) (E:-85.338535)

CONTRACTOR SCS Field Services EQUIPMENT CME 550 METHOD Hollow Stem Auger; HQ Rock Core

DRILLED BY T. Milam LOGGED BY W. Shaughnessy CHECKED BY L. Millet ANGLE _____ BEARING _____

BORING DEPTH 29.5 ft. GROUND WATER DEPTH: DURING 15 ft. COMP. _____ DELAYED 8.9 ft. after 72 hrs.

NOTES Well installed. Refer to well data sheet.



Easting and Northing in NAD 83.
Elevation in NAVD 88.

CLIENT Southern Company Services	PROJECT NAME Plant Hammond Well Installation
PROJECT NUMBER GW6581B	PROJECT LOCATION Plant Hammond
DATE STARTED 11/22/19 COMPLETED 11/26/19	NORTHING 1551092.83 ft EASTING 1943021.47 ft
DRILLER SCS Field Services	GROUND ELEVATION 583.10 ft BORING DIAMETER 8 in
DRILLING METHOD HSA + Rock Coring (NQ)	TOP OF CASING ELEVATION 585.46 ft
SAMPLING METHOD SPT	GEOPHYSICAL CONTRACTOR ---
RIG TYPE CME 550	LOGGED BY N.Tilahun CHECKED BY J. Ivanowski

SCS MONITORING WELLS PLANT HAMMOND MW31 TO MW33 DECEMBER 2019.GPJ ACP GINT LIBRARY CH.GLB 1/10/20

DEPTH (ft)	ELEVATION (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
				0-9': Hand auger.		Top soil	
580						GRAVELLY CLAY, Light brown, low plasticity, gravel is fine grained, angular, trace fine to coarse sand and silt, medium dense, moist. 3': Reddish brown to dark brown.	
575				9-28.3': Hollow stem auger.		CLAY, Brown, medium plasticity, trace fine sand and silt, firm, moist.	Bentonite grout
10						9 - 13.5': No sample.	
570						CLAY, Brown, medium plasticity, trace angular gravel, few fine sand, firm, moist.	
15			89	2-2-2 (4)		15 - 18.5': No sample.	Schedule 40 PVC 2"
565							
20			89	0-0-0 (-) Weight of hammer.		CLAY, Light brown, high plasticity, very soft, laminated, wet.	Bentonite 3/8" chips
			100	0-0-0 (-) Weight of hammer.			
			100	3-2-2 (4)		From 21.5': Dark brown, with weathered limestone fragments, laminated, soft, moist to wet.	
560			22	0-1-1 (2)			20/40 Silica Sand

(Continued Next Page)

CLIENT Southern Company Services

PROJECT NAME Plant Hammond Well Installation

PROJECT NUMBER GW6581B

PROJECT LOCATION Plant Hammond

DEPTH (ft)	ELEVATION (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
25		67	30-40-30 (70)	From 28.3': Coring.		PARTIALLY WEATHERED ROCK (PWR), Gray, fine to coarse gravel sized limestone fragments, very hard, wet. (continued)	
		17	50/3" (-)			LIMESTONE, Dark gray, thinly bedded, hard, slightly weathered, with light gray to white calcite filled veins.	
555		17	50/3" (-)			32 - 37': Void.	
30							
550							
35							

Bottom of borehole at 37.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW31 TO MW33 DECEMBER 2019.GPJ ACP GINT LIBRARY CH.GLB 1/10/20

Easting and Northing in NAD 83.
Elevation in NAVD 88.

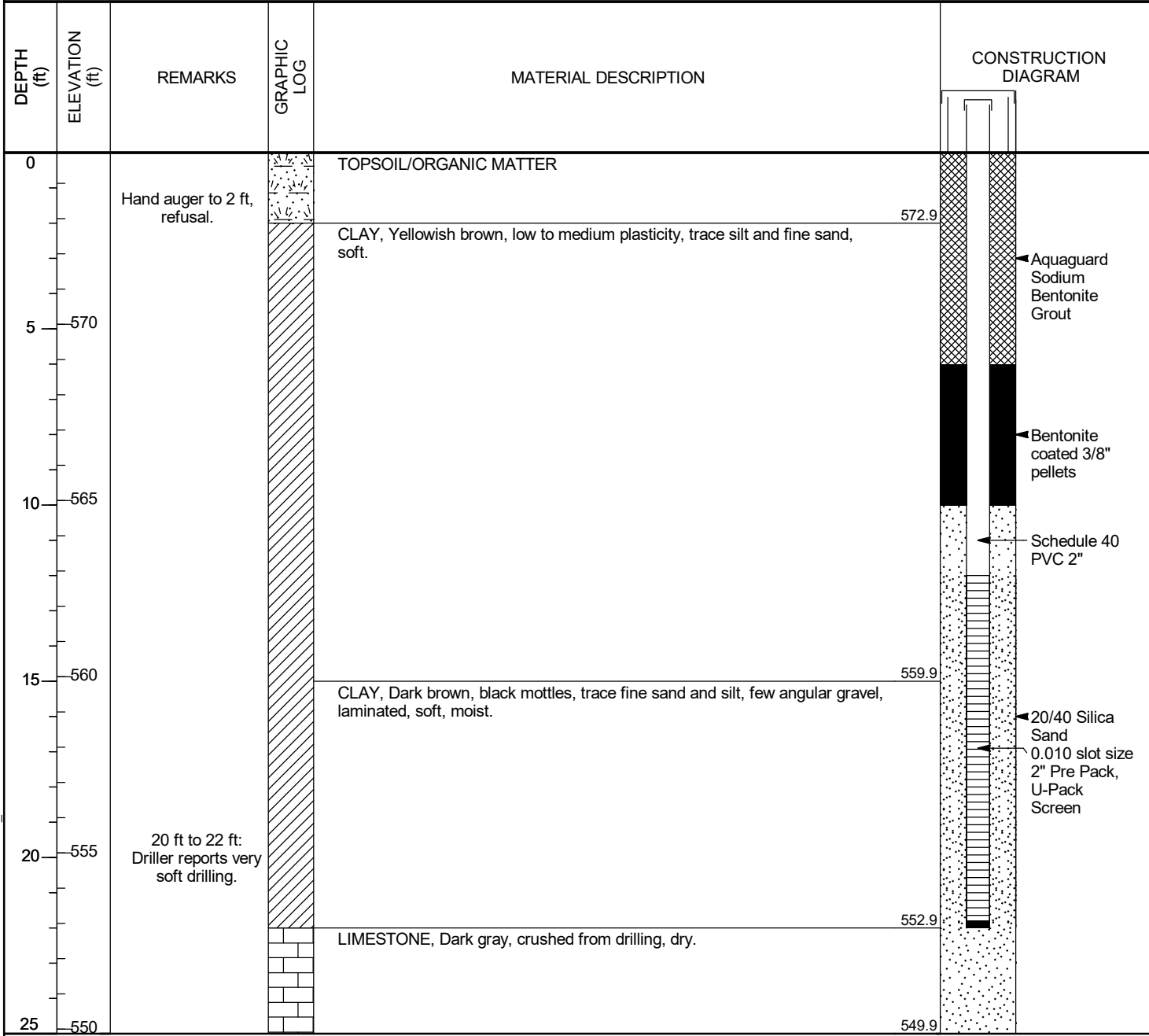
CLIENT Southern Company Services	PROJECT NAME Plant Hammond Well Installation
PROJECT NUMBER GW6581B	PROJECT LOCATION Plant Hammond
DATE STARTED 3/16/20 COMPLETED 3/16/20	NORTHING 1551111.45 ft EASTING 1943089.26 ft
DRILLER SCS Field Services	GROUND ELEVATION 577.60 ft BORING DIAMETER 8 in
DRILLING METHOD Hollow Stem Auger and Coring	TOP OF CASING ELEVATION 580.42 ft
SAMPLING METHOD Split Spoon	GEOPHYSICAL CONTRACTOR ---
RIG TYPE CME 550	LOGGED BY N.Tilahun CHECKED BY D.Yifru

DEPTH (ft)	ELEVATION (ft)	RECOVERY %	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0				0 ft to 9 ft: Hand auger.		GRAVELLY CLAY, Light brown, low plasticity, gravel is fine grained, angular to subangular, trace fine to coarse sand, few silt, firm to stiff.	
5				9 ft to 18.7 ft: Hollow stem auger.			
	575						
	570						
10		100	3-2-3 (5)			CLAY, Brown, low to medium plasticity, soft to firm, trace angular gravel, trace fine sand and silt, moist.	
	565					No sample.	
	564.1						
15		100	1-2-2 (4)			CLAY, Brown, medium plasticity, trace silt and fine to coarse sand, soft, fine angular gravel, moist.	
	560					No sample.	
	559.1						
	558.6					PARTIALLY WEATHERED ROCK (PWR), Dark brown to black, fine grained, laminated, trace angular gravel, very hard, wet.	
20		100	50	From 18.7 ft: Coring.		LIMESTONE, Dark gray to white, thinly bedded, with calcite fillings, slightly weathered, mostly mechanical breaks.	
	554.6						

Bottom of borehole at 23.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW31 TO MW39 MARCH 2020.GPJ ACP GINT LIBRARY CH.GLB 7/18/20

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/18/20</u> COMPLETED <u>5/18/20</u>	NORTHING <u>1551158.16 ft</u> EASTING <u>1943196.47 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>574.87 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>577.25 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>



Bottom of borehole at 25.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41 MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 6/24/20

APPENDIX B

Well Inspection Forms

Groundwater Monitoring Well Integrity Form

Site Name AP-3
 Permit Number _____
 Well ID HGWA-122
 Date, field conditions 8/22/19 clear, sunny, 84°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-3
 Permit Number _____
 Well ID HGWC-120
 Date, field conditions 08/21/19 cloudy, 75°

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-3
 Permit Number _____
 Well ID AGWC-121A
 Date, field conditions 08/22/19 clear, sunny, 80°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	_____	<u>X</u>	_____
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<u>X</u>	_____	_____
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</u>	_____	_____
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	<u>X</u>	_____
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<u>X</u>	_____	_____
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<u>X</u>	_____	_____
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	_____	_____	<u>X</u>
c Does the well require redevelopment (low flow, turbid)?	_____	<u>X</u>	_____
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<u>X</u>	_____	_____

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-3
 Permit Number _____
 Well ID HGWC-124
 Date, field conditions 08/23/19 clear, sunny, 96°F

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-1
 Permit Number _____
 Well ID ADIA-1
 Date, field conditions 08/21/19 Sunny 78°

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-1
 Permit Number _____
 Well ID MW-1
 Date, field conditions DB/21/19 sunny 70°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-3
 Permit Number _____
 Well ID MW-21
 Date, field conditions 08/21/19, sunny 78°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-3
 Permit Number _____
 Well ID MW-23
 Date, field conditions 08/21/19, cloudy 75°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID H16WA-122
 Date, field conditions 10-21-2019

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> <i>minor debris from vegetation</i>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID HGWL-120
 Date, field conditions 10-22-2019 wet / cool

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Corrective actions as needed, by date:				

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number
 Well ID HGWC-121A
 Date, field conditions 10/21/2019

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID HGWC-124
 Date, field conditions 10-21-2019

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID APIA1
 Date, field conditions 10-21-2019 Overcast / Cool

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> minor debris 10/25 from sediment, vegetation
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Only
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> WL
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?				
		<input checked="" type="checkbox"/> NM 10/25	<input checked="" type="checkbox"/> NM 10/25	

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID AMW-1
 Date, field conditions 10-21-2019 Overcast cool

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	✓		
b Is the well properly identified with the correct well ID?	✓		
c Is the well in a high traffic area and does the well require protection from traffic?	✓		
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	✓		
b Is the casing free of degradation or deterioration?	✓		
c Does the casing have a functioning weep hole?	✓		
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e Is the well locked and is the lock in good condition?	✓		
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	✓		
b Is the well pad sloped away from the protective casing?	✓		
c Is the well pad in complete contact with the protective casing?	✓		
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	✓		
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c Is the well properly vented for equilibration of air pressure?	✓		
d Is the survey point clearly marked on the inner casing?	✓		
e Is the depth of the well consistent with the original well log?	✓		
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?			✓
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c Does the well require redevelopment (low flow, turbid)?			✓
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

WL only

✓ NM 10/25

✓ NM 10/25

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammock
 Permit Number _____
 Well ID MW-23
 Date, field conditions 10-21-2019

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

wl
only

✓
nm
10/25

✗ nm 10/25

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond, AP 3
 Permit Number _____
 Well ID HGWA-122
 Date, field conditions 3/23/2020, Rainy, 55°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	_____	<u>X</u>	_____
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<u>X</u>	_____	_____
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad <u>Ant nest nearby</u>			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</u>	_____	_____
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	<u>X</u>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<u>X</u>	_____	_____
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<u>X</u>	_____	<u>(SL)</u>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<u>X</u>	_____	<u>(SL)</u>
c Does the well require redevelopment (low flow, turbid)?	_____	<u>X</u>	<u>(SL)</u>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<u>X</u>	_____	_____

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond, AP-3
 Permit Number _____
 Well ID HGWC-120
 Date, field conditions 3/23/2020, Rainy, 530P

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>		
b Is the well properly identified with the correct well ID?	<u>X</u>		
c Is the well in a high traffic area and does the well require protection from traffic?	<u>X</u>	<u>(SL)</u>	
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<u>X</u>		
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<u>X</u>		
b Is the casing free of degradation or deterioration?	<u>X</u>		
c Does the casing have a functioning weep hole?	<u>X</u>		
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>		
e Is the well locked and is the lock in good condition?	<u>X</u>		
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>		
b Is the well pad sloped away from the protective casing?	<u>X</u>		
c Is the well pad in complete contact with the protective casing?	<u>X</u>		
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<u>X</u>		
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>		
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>		
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>		
c Is the well properly vented for equilibration of air pressure?	<u>X</u>		
d Is the survey point clearly marked on the inner casing?	<u>X</u>		
e Is the depth of the well consistent with the original well log?			<u>X</u>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<u>X</u>		<u>VL only</u>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<u>✓</u>		
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<u>✓</u>		
c Does the well require redevelopment (low flow, turbid)?		<u>✓</u>	
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	<u>✓</u>		
7 Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-3
 Permit Number
 Well ID H6WC-121A
 Date, field conditions 3-25-2020 Wet Conditions

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:
None as of now.

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Ap-3
 Permit Number _____
 Well ID HPWC-124
 Date, field conditions 3/24/20 - scattered rain; 60's

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> DTW only
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond, AP-3
 Permit Number _____
 Well ID MW-21
 Date, field conditions 3/23/2020, Rainy, 53°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	_____	<u>X</u>	_____
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<u>X</u>	_____	_____
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</u>	_____	_____
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	<u>X</u>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<u>X</u>	_____	_____
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	_____	_____	<u>X</u>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	_____	_____	<u>X</u>
c Does the well require redevelopment (low flow, turbid)?	_____	_____	<u>X</u>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<u>X</u>	_____	_____

WL only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number _____
 Well ID MW-23
 Date, field conditions 3/23/2020, rainy, 53°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	_____	<u>X</u>	_____
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<u>X</u>	_____	_____
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</u>	_____	_____
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	<u>X</u>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<u>X</u>	_____	_____
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	_____	_____	<u>X</u>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	_____	_____	<u>X</u>
c Does the well require redevelopment (low flow, turbid)?	_____	_____	<u>X</u>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<u>X</u>	_____	_____

w/L only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name

Plant Hammond, AP-3

Permit Number

Well ID

MW-31

Date, field conditions

2/23/2020, Rainy, 53°F

1 Location/Identification

- | | | yes | no | n/a |
|---|--|----------|-------|-------|
| a | Is the well visible and accessible? | <u>X</u> | _____ | _____ |
| b | Is the well properly identified with the correct well ID? | <u>X</u> | _____ | _____ |
| c | Is the well in a high traffic area and does the well require protection from traffic? | <u>X</u> | _____ | _____ |
| d | Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path) | <u>X</u> | _____ | _____ |

2 Protective Casing

- | | | | | |
|---|---|----------|-------|-------|
| a | Is the protective casing free from apparent damage and able to be secured? | <u>X</u> | _____ | _____ |
| b | Is the casing free of degradation or deterioration? | <u>X</u> | _____ | _____ |
| c | Does the casing have a functioning weep hole? | <u>X</u> | _____ | _____ |
| d | Is the annular space between casings clear of debris and water, or filled with pea gravel/sand? | <u>X</u> | _____ | _____ |
| e | Is the well locked and is the lock in good condition? | <u>X</u> | _____ | _____ |

3 Surface pad

- | | | | | |
|---|--|----------|-------|-------|
| a | Is the well pad in good condition (not cracked or broken)? | <u>X</u> | _____ | _____ |
| b | Is the well pad sloped away from the protective casing? | <u>X</u> | _____ | _____ |
| c | Is the well pad in complete contact with the protective casing? | <u>X</u> | _____ | _____ |
| d | Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on) | <u>X</u> | _____ | _____ |
| e | Is the pad surface clean (not covered with sediment or debris)? | <u>X</u> | _____ | _____ |

4 Internal casing

- | | | | | |
|---|---|----------|----------|----------|
| a | Does the cap prevent entry of foreign material into the well? | <u>X</u> | _____ | _____ |
| b | Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)? | <u>X</u> | _____ | _____ |
| c | Is the well properly vented for equilibration of air pressure? | <u>X</u> | _____ | _____ |
| d | Is the survey point clearly marked on the inner casing? | _____ | <u>X</u> | _____ |
| e | Is the depth of the well consistent with the original well log? | _____ | _____ | <u>X</u> |
| f | Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction) | <u>X</u> | _____ | _____ |
- ⓧ WL only

5 Sampling: Groundwater Wells Only:

- | | | | | |
|---|---|-------|-------|----------|
| a | Does well recharge adequately when purged? | _____ | _____ | <u>X</u> |
| b | If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility? | _____ | _____ | <u>X</u> |
| c | Does the well require redevelopment (low flow, turbid)? | _____ | _____ | <u>X</u> |

6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?

X _____ _____

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-3
 Permit Number
 Well ID MW-32
 Date, field conditions 3-25-2020 Wet Conditions

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	✓		
b Is the well properly identified with the correct well ID?	✓		
c Is the well in a high traffic area and does the well require protection from traffic?		✓	
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	✓		
b Is the casing free of degradation or deterioration?	✓		
c Does the casing have a functioning weep hole?	✓		
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e Is the well locked and is the lock in good condition?	✓		
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	✓		
b Is the well pad sloped away from the protective casing?	✓		
c Is the well pad in complete contact with the protective casing?	✓		
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	✓		
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c Is the well properly vented for equilibration of air pressure?	✓		
d Is the survey point clearly marked on the inner casing?	✓		
e Is the depth of the well consistent with the original well log?			✓
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	✓		
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✗		✓
c Does the well require redevelopment (low flow, turbid)?		✓	
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		
7 Corrective actions as needed, by date:			

No survey

forms on concrete pad need removed.

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-3
 Permit Number
 Well ID MW-39
 Date, field conditions 3-27-2020 sunny, damp

		yes	no	n/a	
1 Location/Identification					
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	small tag
c	Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2 Protective Casing					
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3 Surface pad					
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4 Internal casing					
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	no survey
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5 Sampling: Groundwater Wells Only:					
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?					
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

APPENDIX C

Laboratory Analytical and Field Sampling Reports

Laboratory Reports

March 12, 2020

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

RE: Project: Plant Hammond AP GW6851
Pace Project No.: 2622352

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 2019. 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,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP GW6851

Pace Project No.: 2622352

Pace Analytical Services Atlanta

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

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP GW6851
Pace Project No.: 2622352

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622352001	HGWA-122	Water	08/22/19 10:37	08/23/19 12:00
2622352002	HGWC-121A	Water	08/22/19 13:05	08/23/19 12:00
2622352003	HGWC-120	Water	08/22/19 15:47	08/23/19 12:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6851

Pace Project No.: 2622352

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2622352001	HGWA-122	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622352002	HGWC-121A	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622352003	HGWC-120	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP GW6851
Pace Project No.: 2622352

Sample: HGWA-122		Lab ID: 2622352001		Collected: 08/22/19 10:37		Received: 08/23/19 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	0.00027	1	08/27/19 11:50	08/27/19 18:11	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/27/19 11:50	08/27/19 18:11	7440-38-2	
Barium	0.044	mg/L	0.010	0.00049	1	08/27/19 11:50	08/27/19 18:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/27/19 11:50	08/27/19 18:11	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/27/19 11:50	08/27/19 18:11	7440-43-9	
Chromium	0.00060J	mg/L	0.010	0.00039	1	08/27/19 11:50	08/27/19 18:11	7440-47-3	B
Cobalt	ND	mg/L	0.0050	0.00030	1	08/27/19 11:50	08/27/19 18:11	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/27/19 11:50	08/27/19 18:11	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/27/19 11:50	08/27/19 18:11	7439-93-2	
Molybdenum	0.0030J	mg/L	0.010	0.00095	1	08/27/19 11:50	08/27/19 18:11	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/27/19 11:50	08/27/19 18:11	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/27/19 11:50	08/27/19 18:11	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 14:17	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.12J	mg/L	0.30	0.029	1		08/30/19 20:44	16984-48-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP GW6851
Pace Project No.: 2622352

Sample: HGWC-121A		Lab ID: 2622352002		Collected: 08/22/19 13:05		Received: 08/23/19 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	0.00027	1	08/27/19 11:50	08/27/19 18:17	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/27/19 11:50	08/27/19 18:17	7440-38-2	
Barium	0.066	mg/L	0.010	0.00049	1	08/27/19 11:50	08/27/19 18:17	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/27/19 11:50	08/27/19 18:17	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/27/19 11:50	08/27/19 18:17	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/27/19 11:50	08/27/19 18:17	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/27/19 11:50	08/27/19 18:17	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/27/19 11:50	08/27/19 18:17	7439-92-1	
Lithium	0.0084J	mg/L	0.030	0.00078	1	08/27/19 11:50	08/27/19 18:17	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/27/19 11:50	08/27/19 18:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/27/19 11:50	08/27/19 18:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/27/19 11:50	08/27/19 18:17	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 14:19	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.20J	mg/L	0.30	0.029	1		08/30/19 21:07	16984-48-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP GW6851
Pace Project No.: 2622352

Sample: HGWC-120		Lab ID: 2622352003		Collected: 08/22/19 15:47		Received: 08/23/19 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	0.00027	1	08/27/19 11:50	08/27/19 18:23	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/27/19 11:50	08/27/19 18:23	7440-38-2	
Barium	0.050	mg/L	0.010	0.00049	1	08/27/19 11:50	08/27/19 18:23	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/27/19 11:50	08/27/19 18:23	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/27/19 11:50	08/27/19 18:23	7440-43-9	
Chromium	0.00072J	mg/L	0.010	0.00039	1	08/27/19 11:50	08/27/19 18:23	7440-47-3	B
Cobalt	0.0028J	mg/L	0.0050	0.00030	1	08/27/19 11:50	08/27/19 18:23	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/27/19 11:50	08/27/19 18:23	7439-92-1	
Lithium	0.029J	mg/L	0.030	0.00078	1	08/27/19 11:50	08/27/19 18:23	7439-93-2	
Molybdenum	0.039	mg/L	0.010	0.00095	1	08/27/19 11:50	08/27/19 18:23	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/27/19 11:50	08/27/19 18:23	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/27/19 11:50	08/27/19 18:23	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 14:21	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.30J	mg/L	0.30	0.029	1		08/30/19 21:30	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6851
Pace Project No.: 2622352

QC Batch: 34265 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2622352001, 2622352002, 2622352003

METHOD BLANK: 154112 Matrix: Water
Associated Lab Samples: 2622352001, 2622352002, 2622352003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	08/27/19 13:41	

LABORATORY CONTROL SAMPLE: 154113

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 154114 154115

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2622337002 Result	Spike Conc.	Spike Conc.	Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0025	0.0025	101	100	75-125	1	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6851
Pace Project No.: 2622352

QC Batch: 34320 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622352001, 2622352002, 2622352003

METHOD BLANK: 154347 Matrix: Water
Associated Lab Samples: 2622352001, 2622352002, 2622352003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	08/27/19 16:36	
Arsenic	mg/L	ND	0.0050	0.00035	08/27/19 16:36	
Barium	mg/L	ND	0.010	0.00049	08/27/19 16:36	
Beryllium	mg/L	ND	0.0030	0.000074	08/27/19 16:36	
Cadmium	mg/L	ND	0.0025	0.00011	08/27/19 16:36	
Chromium	mg/L	0.0012J	0.010	0.00039	08/27/19 16:36	
Cobalt	mg/L	ND	0.0050	0.00030	08/27/19 16:36	
Lead	mg/L	ND	0.0050	0.000046	08/27/19 16:36	
Lithium	mg/L	ND	0.030	0.00078	08/27/19 16:36	
Molybdenum	mg/L	ND	0.010	0.00095	08/27/19 16:36	
Selenium	mg/L	ND	0.010	0.0013	08/27/19 16:36	
Thallium	mg/L	ND	0.0010	0.000052	08/27/19 16:36	

LABORATORY CONTROL SAMPLE: 154348

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.090	90	80-120	
Arsenic	mg/L	0.1	0.085	85	80-120	
Barium	mg/L	0.1	0.088	88	80-120	
Beryllium	mg/L	0.1	0.086	86	80-120	
Cadmium	mg/L	0.1	0.088	88	80-120	
Chromium	mg/L	0.1	0.088	88	80-120	
Cobalt	mg/L	0.1	0.086	86	80-120	
Lead	mg/L	0.1	0.086	86	80-120	
Lithium	mg/L	0.1	0.087	87	80-120	
Molybdenum	mg/L	0.1	0.089	89	80-120	
Selenium	mg/L	0.1	0.085	85	80-120	
Thallium	mg/L	0.1	0.087	87	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 154349 154350

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2622337002	Spike Conc.	Spike Conc.	Result							Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	1	20	
Arsenic	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	1	20	
Barium	mg/L	0.078	0.1	0.1	0.18	0.18	104	104	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.092	0.093	92	93	75-125	1	20	
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	101	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6851

Pace Project No.: 2622352

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 154349		154350		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2622337002 Result	MS Spike Conc.	MSD Spike Conc.									
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20		
Lead	mg/L	ND	0.1	0.1	0.096	0.098	96	98	75-125	2	20		
Lithium	mg/L	0.0025J	0.1	0.1	0.095	0.096	92	93	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	106	105	75-125	0	20		
Selenium	mg/L	ND	0.1	0.1	0.099	0.096	99	96	75-125	3	20		
Thallium	mg/L	0.00018J	0.1	0.1	0.098	0.099	97	99	75-125	1	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6851
Pace Project No.: 2622352

QC Batch: 34533 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2622352001, 2622352002, 2622352003

METHOD BLANK: 155485 Matrix: Water
Associated Lab Samples: 2622352001, 2622352002, 2622352003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	08/30/19 13:57	

LABORATORY CONTROL SAMPLE: 155486

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: 155487 155488

Parameter	Units	2622319009		2622337002		2622352001		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Fluoride	mg/L	ND	10	10	10.8	10.7	108	107	90-110	1	15

MATRIX SPIKE SAMPLE: 155523

Parameter	Units	2622337002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.11J	10	9.5	94	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP GW6851

Pace Project No.: 2622352

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6851

Pace Project No.: 2622352

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622352001	HGWA-122	EPA 3005A	34320	EPA 6020B	34344
2622352002	HGWC-121A	EPA 3005A	34320	EPA 6020B	34344
2622352003	HGWC-120	EPA 3005A	34320	EPA 6020B	34344
2622352001	HGWA-122	EPA 7470A	34265	EPA 7470A	34311
2622352002	HGWC-121A	EPA 7470A	34265	EPA 7470A	34311
2622352003	HGWC-120	EPA 7470A	34265	EPA 7470A	34311
2622352001	HGWA-122	EPA 300.0	34533		
2622352002	HGWC-121A	EPA 300.0	34533		
2622352003	HGWC-120	EPA 300.0	34533		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2622352

Client Name: GA Power CCR

PM: BM Due Date: 08/30/19 CLIENT: GAPower-CCR

Courier: [] Fed Ex [] UPS [] USPS [] Client [] Commercial [x] Pace Other

Tracking #: _____

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

Project Name

Packing Material: [x] Bubble Wrap [] Bubble Bags [] None [] Other

Thermometer Used 214 Type of Ice: [x] Wet Blue None [] Samples on ice, cooling process has begun

Cooler Temperature 311°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/23/19 CCR

Temp should be above freezing to 6°C

Comments:

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

September 23, 2019

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

RE: Project: Plant Hammond AP GW6851
Pace Project No.: 2622353

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 2019. 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
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP GW6851
Pace Project No.: 2622353

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
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP GW6851
Pace Project No.: 2622353

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622353001	HGWA-122	Water	08/22/19 10:37	08/23/19 12:00
2622353002	HGWC-121A	Water	08/22/19 13:05	08/23/19 12:00
2622353003	HGWC-120	Water	08/22/19 15:47	08/23/19 12:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6851

Pace Project No.: 2622353

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622353001	HGWA-122	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622353002	HGWC-121A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622353003	HGWC-120	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 GW6851

Pace Project No.: 2622353

Sample: HGWA-122 **Lab ID: 2622353001** Collected: 08/22/19 10:37 Received: 08/23/19 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	0.308 ± 0.250 (0.423) C:89% T:NA	pCi/L	09/05/19 09:54	13982-63-3	
Radium-228	EPA 9320	0.886 ± 0.448 (0.773) C:72% T:79%	pCi/L	09/16/19 12:49	15262-20-1	
Total Radium	Total Radium Calculation	1.19 ± 0.698 (1.20)	pCi/L	09/17/19 14:18	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP GW6851

Pace Project No.: 2622353

Sample: HGWC-121A **Lab ID: 2622353002** Collected: 08/22/19 13:05 Received: 08/23/19 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	0.635 ± 0.316 (0.315) C:92% T:NA	pCi/L	09/05/19 09:54	13982-63-3	
Radium-228	EPA 9320	0.664 ± 0.409 (0.755) C:71% T:79%	pCi/L	09/19/19 12:11	15262-20-1	
Total Radium	Total Radium Calculation	1.30 ± 0.725 (1.07)	pCi/L	09/20/19 12:23	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP GW6851

Pace Project No.: 2622353

Sample: HGWC-120 **Lab ID: 2622353003** Collected: 08/22/19 15:47 Received: 08/23/19 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	0.845 ± 0.350 (0.295) C:98% T:NA	pCi/L	09/05/19 09:52	13982-63-3	
Radium-228	EPA 9320	0.500 ± 0.395 (0.772) C:63% T:78%	pCi/L	09/19/19 12:11	15262-20-1	
Total Radium	Total Radium Calculation	1.35 ± 0.745 (1.07)	pCi/L	09/20/19 12:23	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP GW6851

Pace Project No.: 2622353

QC Batch:	359490	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2622353001, 2622353002, 2622353003		

METHOD BLANK:	1745579	Matrix:	Water
Associated Lab Samples:	2622353001, 2622353002, 2622353003		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.243 ± 0.244 (0.474) C:94% T:NA	pCi/L	09/05/19 08:07	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP GW6851

Pace Project No.: 2622353

QC Batch: 358894

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2622353001

METHOD BLANK: 1742552

Matrix: Water

Associated Lab Samples: 2622353001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.862 ± 0.415 (0.695) C:79% T:75%	pCi/L	09/16/19 12:47	

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 GW6851

Pace Project No.: 2622353

QC Batch: 358895

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2622353002, 2622353003

METHOD BLANK: 1742554

Matrix: Water

Associated Lab Samples: 2622353002, 2622353003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.167 ± 0.291 (0.635) C:73% T:86%	pCi/L	09/19/19 12:11	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP GW6851

Pace Project No.: 2622353

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 GW6851
Pace Project No.: 2622353

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622353001	HGWA-122	EPA 9315	359490		
2622353002	HGWC-121A	EPA 9315	359490		
2622353003	HGWC-120	EPA 9315	359490		
2622353001	HGWA-122	EPA 9320	358894		
2622353002	HGWC-121A	EPA 9320	358895		
2622353003	HGWC-120	EPA 9320	358895		
2622353001	HGWA-122	Total Radium Calculation	361776		
2622353002	HGWC-121A	Total Radium Calculation	362430		
2622353003	HGWC-120	Total Radium Calculation	362430		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2622353

Client Name: GA Power CCR

PM: BM

Due Date: 09/23/19

CLIENT: GAPower-CCR

Courier: [] Fed Ex [] UPS [] USPS [] Client [] Commercial [x] Pace Other

Tracking #: _____

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

Proj. Name: _____

Packing Material: [x] Bubble Wrap [] Bubble Bags [] None [] Other

Thermometer Used 2/4 Type of Ice: Wet Blue None [] Samples on ice, cooling process has begun

Cooler Temperature 31°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/23/19 CAW

Temp should be above freezing to 6°C

Comments:

Table with 16 rows of checklist items and checkboxes. Items 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)

March 12, 2020

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

RE: Project: Plant Hammond AP GW6581
Pace Project No.: 2622398

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2019. 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,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP GW6581

Pace Project No.: 2622398

Pace Analytical Services Atlanta

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

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP GW6581
Pace Project No.: 2622398

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622398001	HGWC-124	Water	08/23/19 10:31	08/26/19 18:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581
Pace Project No.: 2622398

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2622398001	HGWC-124	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2622398

Sample: HGWC-124		Lab ID: 2622398001		Collected: 08/23/19 10:31		Received: 08/26/19 18:30		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	0.00027	1	08/29/19 18:05	08/30/19 17:53	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	08/30/19 17:53	7440-38-2	
Barium	0.066	mg/L	0.010	0.00049	1	08/29/19 18:05	08/30/19 17:53	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	08/30/19 17:53	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	08/30/19 17:53	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	08/30/19 17:53	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	08/30/19 17:53	7440-48-4	
Lead	0.000049J	mg/L	0.0050	0.000046	1	08/29/19 18:05	08/30/19 17:53	7439-92-1	B
Lithium	0.0011J	mg/L	0.030	0.00078	1	08/29/19 18:05	08/30/19 17:53	7439-93-2	
Molybdenum	0.0014J	mg/L	0.010	0.00095	1	08/29/19 18:05	08/30/19 17:53	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	08/30/19 17:53	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	08/30/19 17:53	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	08/28/19 13:26	08/28/19 16:26	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.11J	mg/L	0.30	0.029	1		09/03/19 21:43	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581

Pace Project No.: 2622398

QC Batch: 34391	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 2622398001	

METHOD BLANK: 154672 Matrix: Water

Associated Lab Samples: 2622398001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	08/28/19 16:21	

LABORATORY CONTROL SAMPLE: 154673

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 154674 154675

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2622398001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0025	98	100	75-125	2	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581

Pace Project No.: 2622398

QC Batch: 34496 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622398001

METHOD BLANK: 155177 Matrix: Water

Associated Lab Samples: 2622398001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	08/30/19 17:42	
Arsenic	mg/L	ND	0.0050	0.00035	08/30/19 17:42	
Barium	mg/L	ND	0.010	0.00049	08/30/19 17:42	
Beryllium	mg/L	ND	0.0030	0.000074	08/30/19 17:42	
Cadmium	mg/L	ND	0.0025	0.00011	08/30/19 17:42	
Chromium	mg/L	ND	0.010	0.00039	08/30/19 17:42	
Cobalt	mg/L	ND	0.0050	0.00030	08/30/19 17:42	
Lead	mg/L	ND	0.0050	0.000046	08/30/19 17:42	
Lithium	mg/L	ND	0.030	0.00078	08/30/19 17:42	
Molybdenum	mg/L	ND	0.010	0.00095	08/30/19 17:42	
Selenium	mg/L	ND	0.010	0.0013	08/30/19 17:42	
Thallium	mg/L	ND	0.0010	0.000052	08/30/19 17:42	

LABORATORY CONTROL SAMPLE: 155178

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	104	80-120	
Arsenic	mg/L	0.1	0.10	101	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.10	104	80-120	
Cadmium	mg/L	0.1	0.10	103	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.11	105	80-120	
Molybdenum	mg/L	0.1	0.10	105	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155179 155180

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2622479002	Spike Conc.	Spike Conc.	Result							Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	104	102	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.11	0.11	106	107	75-125	1	20	
Barium	mg/L	0.036	0.1	0.1	0.14	0.13	103	97	75-125	4	20	
Beryllium	mg/L	0.00024J	0.1	0.1	0.098	0.095	97	95	75-125	3	20	
Cadmium	mg/L	0.00072	0.1	0.1	0.10	0.099	100	98	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581

Pace Project No.: 2622398

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155179		155180		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2622479002 Result	MS Spike Conc.	MSD Spike Conc.									
Chromium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Cobalt	mg/L	0.0018J	0.1	0.1	0.098	0.098	97	96	75-125	1	20		
Lead	mg/L	0.000049J	0.1	0.1	0.094	0.093	94	93	75-125	1	20		
Lithium	mg/L	0.0033J	0.1	0.1	0.10	0.10	100	97	75-125	2	20		
Molybdenum	mg/L	0.0065J	0.1	0.1	0.11	0.11	106	105	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.11	0.11	106	109	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	1	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581

Pace Project No.: 2622398

QC Batch: 34680	Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0	Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2622398001	

METHOD BLANK: 156099 Matrix: Water
Associated Lab Samples: 2622398001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	09/03/19 20:58	

LABORATORY CONTROL SAMPLE: 156100

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.4	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 156101 156102

Parameter	Units	2622398001		156102		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Fluoride	mg/L	0.11J	10	10	9.4	9.2	92	91	90-110	1	15	

MATRIX SPIKE SAMPLE: 156103

Parameter	Units	2622402001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	10	9.6	96	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 GW6581

Pace Project No.: 2622398

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581
Pace Project No.: 2622398

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622398001	HGWC-124	EPA 3005A	34496	EPA 6020B	34557
2622398001	HGWC-124	EPA 7470A	34391	EPA 7470A	34429
2622398001	HGWC-124	EPA 300.0	34680		

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
 Requested Due Date: Standard
Section B
Required Project Information:
 Report To: Jolu Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10382775
 Project Name: Plant Hammond AP
 Project #: GW4591
Section C
Invoice Information:
 Attention: SCSInvoices@southernco.com
 Company Name: Pace Quote:
 Pace Project Manager: beissy.mcdanielle@pacelabs.com
 Pace Profile #: 327.4.2

Page: 1 of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES						Residual Chlorine (Y/N)	Received on	Temp in C	Custody (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Intact Samples (Y/N)	
			START DATE	END DATE				H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol								Other
1	Drinking Water	DW	08/23/19	08/23/19	WTG	WTG	1	Unpreserved													
2	Waste Water	WW																			
3	Product	P																			
4	Soil/Solid	SL																			
5	Oil	OL																			
6	Wipe	WIP																			
7	Air	AT																			
8	Other	OT																			
9	Tissue	TS																			

ADMINISTRATIVE COMMENTS:
 08/23/19 NM
 08/23/19 1530
 08/23/19 1540
 Melba Mendenhall
 Christine Hery
 Melba Mendenhall
 Christine Hery
 DATE: 08/23/19
 DATE SIGNED: 08/23/19
 SIGNATURE OF SAMPLER: Melba Mendenhall
 SIGNATURE OF SAMPLER: Melba Mendenhall
 PRINT NAME OF SAMPLER: Melba Mendenhall
 SIGNATURE AND SIGNATURE: Melba Mendenhall
 DATE SIGNED: 08/23/19

NO# : 2622398

 2622398
 Page 2 of 13



Sample Condition Upon Receipt

WO#: 2622398

Client Name: GAPower

PM: BM Due Date: 09/04/19
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 214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.5°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 2/26/19

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 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 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 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	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)

September 25, 2019

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

RE: Project: Plant Hammond AP GW 6581
Pace Project No.: 2622399

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2019. 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
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP GW 6581

Pace Project No.: 2622399

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

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP GW 6581

Pace Project No.: 2622399

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622399001	HGWC-124	Water	08/23/19 10:31	08/26/19 18:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW 6581

Pace Project No.: 2622399

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622399001	HGWC-124	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 GW 6581

Pace Project No.: 2622399

Sample: HGWC-124 **Lab ID: 2622399001** Collected: 08/23/19 10:31 Received: 08/26/19 18:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.450 ± 0.217 (0.233) C:87% T:NA	pCi/L	09/09/19 08:53	13982-63-3	
Radium-228	EPA 9320	0.384 ± 0.279 (0.534) C:79% T:91%	pCi/L	09/20/19 11:53	15262-20-1	
Total Radium	Total Radium Calculation	0.834 ± 0.496 (0.767)	pCi/L	09/23/19 12:55	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP GW 6581

Pace Project No.: 2622399

QC Batch: 359966

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2622399001

METHOD BLANK: 1747390

Matrix: Water

Associated Lab Samples: 2622399001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.232 ± 0.311 (0.664) C:77% T:89%	pCi/L	09/20/19 11:52	

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 GW 6581

Pace Project No.: 2622399

QC Batch: 359801

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2622399001

METHOD BLANK: 1746802

Matrix: Water

Associated Lab Samples: 2622399001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.563 ± 0.229 (0.205) C:97% T:NA	pCi/L	09/09/19 09:06	

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 GW 6581
Pace Project No.: 2622399

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 GW 6581
Pace Project No.: 2622399

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622399001	HGWC-124	EPA 9315	359801		
2622399001	HGWC-124	EPA 9320	359966		
2622399001	HGWC-124	Total Radium Calculation	362632		

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:
 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 IRS

Report To: Joly Abraham / Lauren Petty
Copy To: Geosyntec
Purchase Order #: SCS10382775
Project Name: Plant Hammond AP
Project #: 54120531

Attention: scsinvoices@southernco.com
Company Name:
Address:
Pace Quote:
Pace Project Manager: betsy.mcdaniel@paceelabs.com
Pace Profile #: 327.4.2
State / Location: GA

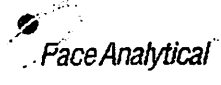
ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Y/N	Requested Analysis Filtered (Y/N)					Residual Chlorine (Y/N)											
			START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	App. IV Metals	Fluoride by 300.0	Radium 226/228																		
1	HGW-C-124	WTG	8/29/19 10:12	8/29/19 10:51	21	4	3																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Abelia Njenduroba	08/23/19	1530	Abelia Njenduroba	08/23/19	1540	
	Christine Hegy	08/23/19	0815	Abelia Njenduroba	08/23/19	0815	

SAMPLER NAME AND SIGNATURE: Abelia Flyskus
PRINT Name of SAMPLER: Abelia Flyskus
SIGNATURE of SAMPLER: Abelia Flyskus
DATE Signed: 08/23/19

W0# : 2622399

Page 10 of 11



Sample Condition Upon Receipt

WO#: 2622399

Client Name: GA Power

PM: BM Due Date: 09/25/19 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 214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.5°C Biological Tissue is Frozen: Yes No Temp should be above freezing to 6°C

Date and Initials of person examining contents: 8/26/19

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:

March 12, 2020

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

RE: Project: Plant Hammond AP
Pace Project No.: 2622400

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2019. 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,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
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.: 2622400

Pace Analytical Services Atlanta

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
Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP
Pace Project No.: 2622400

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622400001	EB-01	Water	08/23/19 11:45	08/26/19 18:30
2622400002	EB-02	Water	08/23/19 11:55	08/26/19 18:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP
Pace Project No.: 2622400

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2622400001	EB-01	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622400002	EB-02	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP
Pace Project No.: 2622400

Sample: EB-01		Lab ID: 2622400001		Collected: 08/23/19 11:45		Received: 08/26/19 18:30		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	0.00027	1	08/29/19 18:05	08/30/19 17:59	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	08/30/19 17:59	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/29/19 18:05	08/30/19 17:59	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	08/30/19 17:59	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	08/30/19 17:59	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	08/30/19 17:59	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	08/30/19 17:59	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	08/30/19 17:59	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	08/30/19 17:59	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	08/30/19 17:59	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	08/30/19 17:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	08/30/19 17:59	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	08/28/19 13:26	08/28/19 16:35	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		08/31/19 00:53	16984-48-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP
Pace Project No.: 2622400

Sample: EB-02		Lab ID: 2622400002		Collected: 08/23/19 11:55		Received: 08/26/19 18:30		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	0.00027	1	08/29/19 18:05	08/30/19 18:05	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	08/30/19 18:05	7440-38-2		
Barium	ND	mg/L	0.010	0.00049	1	08/29/19 18:05	08/30/19 18:05	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	08/30/19 18:05	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	08/30/19 18:05	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	08/30/19 18:05	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	08/30/19 18:05	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	08/30/19 18:05	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	08/30/19 18:05	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	08/30/19 18:05	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	08/30/19 18:05	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	08/30/19 18:05	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/28/19 13:26	08/28/19 16:38	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		08/31/19 01:16	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2622400

QC Batch: 34391 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2622400001, 2622400002

METHOD BLANK: 154672 Matrix: Water

Associated Lab Samples: 2622400001, 2622400002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	08/28/19 16:21	

LABORATORY CONTROL SAMPLE: 154673

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 154674 154675

Parameter	Units	154674		154675		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2622398001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0025	98	100	75-125	2	20

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2622400

QC Batch: 34496 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622400001, 2622400002

METHOD BLANK: 155177 Matrix: Water
Associated Lab Samples: 2622400001, 2622400002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	08/30/19 17:42	
Arsenic	mg/L	ND	0.0050	0.00035	08/30/19 17:42	
Barium	mg/L	ND	0.010	0.00049	08/30/19 17:42	
Beryllium	mg/L	ND	0.0030	0.000074	08/30/19 17:42	
Cadmium	mg/L	ND	0.0025	0.00011	08/30/19 17:42	
Chromium	mg/L	ND	0.010	0.00039	08/30/19 17:42	
Cobalt	mg/L	ND	0.0050	0.00030	08/30/19 17:42	
Lead	mg/L	ND	0.0050	0.000046	08/30/19 17:42	
Lithium	mg/L	ND	0.030	0.00078	08/30/19 17:42	
Molybdenum	mg/L	ND	0.010	0.00095	08/30/19 17:42	
Selenium	mg/L	ND	0.010	0.0013	08/30/19 17:42	
Thallium	mg/L	ND	0.0010	0.000052	08/30/19 17:42	

LABORATORY CONTROL SAMPLE: 155178

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	104	80-120	
Arsenic	mg/L	0.1	0.10	101	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.10	104	80-120	
Cadmium	mg/L	0.1	0.10	103	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.11	105	80-120	
Molybdenum	mg/L	0.1	0.10	105	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155179 155180

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2622479002	Spike Conc.	Spike Conc.	Result							Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	104	102	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.11	0.11	106	107	75-125	1	20	
Barium	mg/L	0.036	0.1	0.1	0.14	0.13	103	97	75-125	4	20	
Beryllium	mg/L	0.00024J	0.1	0.1	0.098	0.095	97	95	75-125	3	20	
Cadmium	mg/L	0.00072	0.1	0.1	0.10	0.099	100	98	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2622400

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155179												155180	
Parameter	Units	2622479002 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	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Cobalt	mg/L	0.0018J	0.1	0.1	0.098	0.098	97	96	75-125	1	20		
Lead	mg/L	0.000049J	0.1	0.1	0.094	0.093	94	93	75-125	1	20		
Lithium	mg/L	0.0033J	0.1	0.1	0.10	0.10	100	97	75-125	2	20		
Molybdenum	mg/L	0.0065J	0.1	0.1	0.11	0.11	106	105	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.11	0.11	106	109	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	1	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2622400

QC Batch: 34533 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2622400001, 2622400002

METHOD BLANK: 155485 Matrix: Water
Associated Lab Samples: 2622400001, 2622400002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	08/30/19 13:57	

LABORATORY CONTROL SAMPLE: 155486

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: 155487 155488

Parameter	Units	2622319009		2622337002		2622319009		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Fluoride	mg/L	ND	10	10	10.8	10.7	108	107	90-110	1	15

MATRIX SPIKE SAMPLE: 155523

Parameter	Units	2622337002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.11J	10	9.5	94	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2622400

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 2622400

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622400001	EB-01	EPA 3005A	34496	EPA 6020B	34557
2622400002	EB-02	EPA 3005A	34496	EPA 6020B	34557
2622400001	EB-01	EPA 7470A	34391	EPA 7470A	34429
2622400002	EB-02	EPA 7470A	34391	EPA 7470A	34429
2622400001	EB-01	EPA 300.0	34533		
2622400002	EB-02	EPA 300.0	34533		

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 Manor Road
 Atlanta, GA 30339
 Phone: jabraham@southernco.com
 (404) 508-7239
 Fax: _____

Section B
Required Project Information:
 Report To: Jolu Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10382775
 Project Name: Plant Hammond AP
 Project #: _____

Section C
Invoice Information:
 Attention: sctinvoices@southernco.com
 Company Name: _____
 Address: _____
 Pace Quote: _____
 Pace Project Manager: betsy.mcdaniel@pace labs.com.
 Pace Profile #: 327.4.2
 GA

Page: 1 of 1

ITEM #	MATRIX	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION	PRESERVATIVES				Residual Chlorine (Y/N)													
			START	END			# OF CONTAINERS	Unpreserved	H2SO4	HNO3		HCl	NaOH	Na2S2O3	Methanol	Other								
																	DATE	TIME	DATE	TIME				
1		MT G	8/23/19	1140	8/23/19	1145	26	4	1	3														
2		MT G	8/23/19	1150	8/23/19	1155	26	4	1	3														
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS: _____

APPROVED BY ANALYST: _____

DATE: 8/23/19
TIME: 1540

APPROVED BY COLLECTION: _____

DATE: 8/23/19
TIME: 1540

REQUISITIONER/APPRAISON: Noelia Muskus
DATE: 8/23/19
TIME: 1530

SAMPLER: Christine Hegy
DATE: 8/23/19
TIME: 0815

TEMP IN C: _____
RECEIVED ON: _____
IS (Y/N): _____
SEALED (Y/N): _____
COOLER (Y/N): _____
SAMPLES (Y/N): _____
INLET (Y/N): _____

DATE SIGNED: 08/23/19

SIGNATURE OF SAMPLER: Noelia Muskus

PRINT NAME AND SIGNATURE: Noelia Muskus

SIGNATURE OF SAMPLER: Noelia Muskus

WO# : 2622400

2622400

Sample Condition Upon Receipt

WO#: 2622400



Client Name: GAPowerCCR

PM: BM

Due Date: 09/04/1

CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Proj. Due Date:
Proj. Name:

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

Packing Material: Bubble Wrap Bubble Bags None Other
Thermometer Used 214
Cooler Temperature 2.8°C
Type of Ice: Wet Blue None
Biological Tissue is Frozen: Yes No
Samples on ice, cooling process has begun

Date and Initials of person examining contents: 8/26/14

Table with 16 rows of checklist items and checkboxes. Items 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:
Person Contacted:
Date/Time:
Field Data Required? Y / N
Comments/ Resolution:

Project Manager Review:
Date:

September 25, 2019

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

RE: Project: Plant Hammond AP
Pace Project No.: 2622401

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2019. 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
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.: 2622401

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
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 2622401

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622401001	EB-01	Water	08/23/19 11:45	08/26/19 18:30
2622401002	EB-02	Water	08/23/19 11:55	08/26/19 18:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 2622401

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622401001	EB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622401002	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 AP

Pace Project No.: 2622401

Sample: EB-01 **Lab ID: 2622401001** Collected: 08/23/19 11:45 Received: 08/26/19 18:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.251 ± 0.254 (0.495) C:91% T:NA	pCi/L	09/18/19 08:37	13982-63-3	
Radium-228	EPA 9320	-0.369 ± 0.255 (0.680) C:77% T:83%	pCi/L	09/20/19 11:53	15262-20-1	
Total Radium	Total Radium Calculation	0.251 ± 0.509 (1.18)	pCi/L	09/23/19 12:55	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 2622401

Sample: EB-02 **Lab ID: 2622401002** Collected: 08/23/19 11:55 Received: 08/26/19 18:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.539 ± 0.297 (0.374) C:91% T:NA	pCi/L	09/18/19 08:37	13982-63-3	
Radium-228	EPA 9320	0.478 ± 0.382 (0.753) C:75% T:75%	pCi/L	09/20/19 11:54	15262-20-1	
Total Radium	Total Radium Calculation	1.02 ± 0.679 (1.13)	pCi/L	09/23/19 12:55	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 2622401

QC Batch: 359964

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2622401001, 2622401002

METHOD BLANK: 1747386

Matrix: Water

Associated Lab Samples: 2622401001, 2622401002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.204 ± 0.233 (0.472) C:94% T:NA	pCi/L	09/18/19 08:31	

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.: 2622401

QC Batch: 359966

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2622401001, 2622401002

METHOD BLANK: 1747390

Matrix: Water

Associated Lab Samples: 2622401001, 2622401002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.232 ± 0.311 (0.664) C:77% T:89%	pCi/L	09/20/19 11:52	

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.: 2622401

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

Pace Project No.: 2622401

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622401001	EB-01	EPA 9315	359964		
2622401002	EB-02	EPA 9315	359964		
2622401001	EB-01	EPA 9320	359966		
2622401002	EB-02	EPA 9320	359966		
2622401001	EB-01	Total Radium Calculation	362632		
2622401002	EB-02	Total Radium Calculation	362632		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2622401

Face Analytical

Client Name: GAPower CCR

PM: BM

Due Date: 09/25/19

CLIENT: GAPower-CCR

Courier: [] Fed Ex [] UPS [] USPS [] Client [] Commercial [x] Pace Other

Tracking #: _____

Optional: Proj. Due Date: Proj. Name:

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

Packing Material: [] Bubble Wrap [] Bubble Bags [x] None [] Other

Thermometer Used

214
2.8°C

Type of Ice: [x] Wet Blue None

[] Samples on ice, cooling process has begun

Cooler Temperature

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/26/19 [Signature]

Temp should be above freezing to 6°C

Comments:

Table with 16 rows of checklist items (Chain of Custody Present, Filled Out, Relinquished, 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: _____

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 19, 2019

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

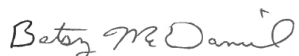
RE: Project: PLANT HAMMOND RAD
Pace Project No.: 2624782

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 22, 2019. 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
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND RAD
Pace Project No.: 2624782

Pace Analytical Services Pennsylvania

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND RAD

Pace Project No.: 2624782

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624782001	HGWA-122	Water	10/21/19 11:55	10/22/19 09:57
2624782002	HGWC-124	Water	10/21/19 13:35	10/22/19 09:57
2624782003	HGWC-121A	Water	10/21/19 16:50	10/22/19 09:57

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND RAD

Pace Project No.: 2624782

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624782001	HGWA-122	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624782002	HGWC-124	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624782003	HGWC-121A	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 RAD

Pace Project No.: 2624782

Sample: HGWA-122 **Lab ID: 2624782001** Collected: 10/21/19 11:55 Received: 10/22/19 09:57 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.555 ± 0.349 (0.528) C:70% T:NA	pCi/L	11/15/19 08:32	13982-63-3	
Radium-228	EPA 9320	0.217 ± 0.359 (0.782) C:77% T:77%	pCi/L	11/12/19 12:15	15262-20-1	
Total Radium	Total Radium Calculation	0.772 ± 0.708 (1.31)	pCi/L	11/18/19 14:56	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT HAMMOND RAD

Pace Project No.: 2624782

Sample: HGWC-124 **Lab ID: 2624782002** Collected: 10/21/19 13:35 Received: 10/22/19 09:57 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.707 ± 0.330 (0.376) C:92% T:NA	pCi/L	11/15/19 08:32	13982-63-3	
Radium-228	EPA 9320	0.406 ± 0.425 (0.887) C:81% T:80%	pCi/L	11/12/19 12:15	15262-20-1	
Total Radium	Total Radium Calculation	1.11 ± 0.755 (1.26)	pCi/L	11/18/19 14:56	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT HAMMOND RAD

Pace Project No.: 2624782

Sample: HGWC-121A **Lab ID: 2624782003** Collected: 10/21/19 16:50 Received: 10/22/19 09:57 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.327 ± 0.243 (0.397) C:90% T:NA	pCi/L	11/15/19 08:32	13982-63-3	
Radium-228	EPA 9320	0.0664 ± 0.338 (0.770) C:81% T:84%	pCi/L	11/12/19 15:51	15262-20-1	
Total Radium	Total Radium Calculation	0.393 ± 0.581 (1.17)	pCi/L	11/18/19 14:56	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT HAMMOND RAD

Pace Project No.: 2624782

QC Batch: 369306

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2624782001, 2624782002, 2624782003

METHOD BLANK: 1791694

Matrix: Water

Associated Lab Samples: 2624782001, 2624782002, 2624782003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.317 ± 0.325 (0.673) C:79% T:91%	pCi/L	11/12/19 12:14	

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT HAMMOND RAD

Pace Project No.: 2624782

QC Batch: 369307 Analysis Method: EPA 9315

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

Associated Lab Samples: 2624782001, 2624782002, 2624782003

METHOD BLANK: 1791695 Matrix: Water

Associated Lab Samples: 2624782001, 2624782002, 2624782003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.330 ± 0.234 (0.359) C:92% T:NA	pCi/L	11/15/19 08:32	

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 RAD

Pace Project No.: 2624782

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 RAD

Pace Project No.: 2624782

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624782001	HGWA-122	EPA 9315	369307		
2624782002	HGWC-124	EPA 9315	369307		
2624782003	HGWC-121A	EPA 9315	369307		
2624782001	HGWA-122	EPA 9320	369306		
2624782002	HGWC-124	EPA 9320	369306		
2624782003	HGWC-121A	EPA 9320	369306		
2624782001	HGWA-122	Total Radium Calculation	371524		
2624782002	HGWC-124	Total Radium Calculation	371524		
2624782003	HGWC-121A	Total Radium Calculation	371524		

REPORT OF LABORATORY ANALYSIS

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Face Analytical

Client: BM

Due Date: 11/19/19

MO#: 2624782

Due Date: 10/29/19
 CLIENT: GPower-CR
 M: BM

Counter: Fed Ex UPS Other

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no

Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags Other

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Thermometer Used

5.8
 21.2

Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: _____

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

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 (<7hr):	<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.
-Face 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 type="checkbox"/> Yes <input checked="" 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/D/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 type="checkbox"/> Yes <input type="checkbox"/> No	
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Custody Seals Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Face Trip Blank Lot # (if purchased):		

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

Comments/Resolution: _____

3000 W28

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)

December 13, 2019

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

RE: Project: PLANT HAMMOND
Pace Project No.: 2624784

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 22, 2019. 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,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND

Pace Project No.: 2624784

Pace Analytical Services Atlanta

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

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND
Pace Project No.: 2624784

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624784001	HGWA-122	Water	10/21/19 11:55	10/22/19 09:57
2624784002	HGWC-124	Water	10/21/19 13:35	10/22/19 09:57
2624784003	HGWC-121A	Water	10/21/19 16:50	10/22/19 09:57

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND

Pace Project No.: 2624784

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624784001	HGWA-122	EPA 6020B	CSW	8
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624784002	HGWC-124	EPA 6020B	CSW	8
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624784003	HGWC-121A	EPA 6020B	CSW	8
		SM 2540C	MZP	1
		EPA 300.0	MWB	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2624784

Sample: HGWA-122		Lab ID: 2624784001		Collected: 10/21/19 11:55		Received: 10/22/19 09:57		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								
Barium	0.040	mg/L	0.010	0.00049	1	10/28/19 20:04	10/29/19 20:02	7440-39-3		
Boron	0.25	mg/L	0.040	0.0049	1	10/28/19 20:04	10/29/19 20:02	7440-42-8		
Calcium	80.8	mg/L	5.0	0.55	50	10/28/19 20:04	10/29/19 20:08	7440-70-2		
Chromium	0.00068J	mg/L	0.010	0.00039	1	10/28/19 20:04	10/29/19 20:02	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	10/28/19 20:04	10/29/19 20:02	7440-48-4		
Lead	0.000097J	mg/L	0.0050	0.000046	1	10/28/19 20:04	10/29/19 20:02	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	10/28/19 20:04	10/29/19 20:02	7439-93-2		
Molybdenum	0.0049J	mg/L	0.010	0.00095	1	10/28/19 20:04	10/29/19 20:02	7439-98-7		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	296	mg/L	10.0	10.0	1		10/28/19 13:56			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	4.5	mg/L	1.0	0.024	1		10/29/19 16:32	16887-00-6		
Fluoride	0.15J	mg/L	0.30	0.029	1		10/29/19 16:32	16984-48-8		
Sulfate	45.6	mg/L	1.0	0.017	1		10/29/19 16:32	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND

Pace Project No.: 2624784

Sample: HGWC-124		Lab ID: 2624784002		Collected: 10/21/19 13:35		Received: 10/22/19 09:57		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								
Barium	0.075	mg/L	0.010	0.00049	1	10/28/19 20:04	10/29/19 20:25	7440-39-3		
Boron	0.50	mg/L	0.040	0.0049	1	10/28/19 20:04	10/29/19 20:25	7440-42-8		
Calcium	96.9	mg/L	5.0	0.55	50	10/28/19 20:04	10/29/19 20:31	7440-70-2		
Chromium	0.00046J	mg/L	0.010	0.00039	1	10/28/19 20:04	10/29/19 20:25	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	10/28/19 20:04	10/29/19 20:25	7440-48-4		
Lead	0.000049J	mg/L	0.0050	0.000046	1	10/28/19 20:04	10/29/19 20:25	7439-92-1		
Lithium	0.0011J	mg/L	0.030	0.00078	1	10/28/19 20:04	10/29/19 20:25	7439-93-2		
Molybdenum	0.0013J	mg/L	0.010	0.00095	1	10/28/19 20:04	10/29/19 20:25	7439-98-7		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	357	mg/L	10.0	10.0	1		10/28/19 13:57			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	3.6	mg/L	1.0	0.024	1		10/29/19 18:20	16887-00-6		
Fluoride	0.073J	mg/L	0.30	0.029	1		10/29/19 18:20	16984-48-8		
Sulfate	78.5	mg/L	5.0	0.085	5		10/29/19 19:24	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2624784

Sample: HGWC-121A		Lab ID: 2624784003		Collected: 10/21/19 16:50		Received: 10/22/19 09:57		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								
Barium	0.074	mg/L	0.010	0.00049	1	10/28/19 20:04	10/29/19 20:36	7440-39-3		
Boron	2.4	mg/L	0.040	0.0049	1	10/28/19 20:04	10/29/19 20:36	7440-42-8		
Calcium	173	mg/L	5.0	0.55	50	10/28/19 20:04	10/29/19 20:42	7440-70-2		
Chromium	ND	mg/L	0.010	0.00039	1	10/28/19 20:04	10/29/19 20:36	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	10/28/19 20:04	10/29/19 20:36	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	10/28/19 20:04	10/29/19 20:36	7439-92-1		
Lithium	0.0090J	mg/L	0.030	0.00078	1	10/28/19 20:04	10/29/19 20:36	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	10/28/19 20:04	10/29/19 20:36	7439-98-7		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	771	mg/L	10.0	10.0	1		10/28/19 13:57			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	29.9	mg/L	1.0	0.024	1		10/29/19 18:42	16887-00-6		
Fluoride	0.18J	mg/L	0.30	0.029	1		10/29/19 18:42	16984-48-8		
Sulfate	238	mg/L	10.0	0.17	10		10/29/19 20:07	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2624784

QC Batch: 37696 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624784001, 2624784002, 2624784003

METHOD BLANK: 171182 Matrix: Water
Associated Lab Samples: 2624784001, 2624784002, 2624784003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	mg/L	ND	0.010	0.00049	10/29/19 19:20	
Boron	mg/L	ND	0.040	0.0049	10/29/19 19:20	
Calcium	mg/L	ND	0.10	0.011	10/29/19 19:20	
Chromium	mg/L	ND	0.010	0.00039	10/29/19 19:20	
Cobalt	mg/L	ND	0.0050	0.00030	10/29/19 19:20	
Lead	mg/L	ND	0.0050	0.000046	10/29/19 19:20	
Lithium	mg/L	ND	0.030	0.00078	10/29/19 19:20	
Molybdenum	mg/L	ND	0.010	0.00095	10/29/19 19:20	

LABORATORY CONTROL SAMPLE: 171183

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.1	0.10	104	80-120	
Boron	mg/L	1	0.99	99	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.11	106	80-120	
Lead	mg/L	0.1	0.11	106	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171184 171185

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2624794002 Result	Spike Conc.	Spike Conc.	MS Result							
Barium	mg/L	0.35	0.1	0.1	0.46	0.46	108	109	75-125	0	20	
Boron	mg/L	1.1	1	1	1.9	1.9	78	81	75-125	1	20	
Calcium	mg/L	260	1	1	269	272	841	1200	75-125	1	20	
Chromium	mg/L	0.0019J	0.1	0.1	0.11	0.11	104	103	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.095	0.094	95	94	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.095	0.096	95	96	75-125	1	20	
Lithium	mg/L	0.096	0.1	0.1	0.20	0.20	101	102	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	109	110	75-125	0	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

Pace Project No.: 2624784

QC Batch: 37730 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2624784001, 2624784002, 2624784003

METHOD BLANK: 171248 Matrix: Water

Associated Lab Samples: 2624784001, 2624784002, 2624784003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.034J	1.0	0.024	10/29/19 13:23	
Fluoride	mg/L	ND	0.30	0.029	10/29/19 13:23	
Sulfate	mg/L	ND	1.0	0.017	10/29/19 13:23	

LABORATORY CONTROL SAMPLE: 171249

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.8	108	90-110	
Sulfate	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171250 171251

Parameter	Units	2624505001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	57.2	20	20	75.8	74.8	93	88	90-110	1	15	M1
Fluoride	mg/L	1.7	20	20	20.7	21.6	95	100	90-110	4	15	
Sulfate	mg/L	ND	20	20	ND	ND	0	0	90-110		15	M1

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT HAMMOND

Pace Project No.: 2624784

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

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

Pace Project No.: 2624784

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624784001	HGWA-122	EPA 3005A	37696	EPA 6020B	37751
2624784002	HGWC-124	EPA 3005A	37696	EPA 6020B	37751
2624784003	HGWC-121A	EPA 3005A	37696	EPA 6020B	37751
2624784001	HGWA-122	SM 2540C	37642		
2624784002	HGWC-124	SM 2540C	37642		
2624784003	HGWC-121A	SM 2540C	37642		
2624784001	HGWA-122	EPA 300.0	37730		
2624784002	HGWC-124	EPA 300.0	37730		
2624784003	HGWC-121A	EPA 300.0	37730		

REPORT OF LABORATORY ANALYSIS

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Section A

Section B

Required Client Information:
Company: Georgia Power Coal Combustion Residuals
Address: 2480 Marner Road
Atlanta, GA 30339
Email: jabraham@southtrono.com
Phone: (404)506-7239 Fax: [Blank]
Requested Due Date: STANDARD TAT

Required Project Information:
Report To: Jim Abraham
Copy To: Lauren Pully, Geosyntec
Purchase Order #: SCS10382775
Project Name: Plant Hammond
Project #: 6W6591

Attention: acshroves@southtrono.com
Company Name: [Blank]
Address: [Blank]
Phone Quote: [Blank]
Pace Project Manager: betsy.mcdaniel@geacells.com
Pace Profile #: 327 (AP)

GA

WO#: 2624782

2624782

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helds m

WO#: 2624784

2624784

ITEM #	MATRIX	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED			PRESERVATIVES										TEMP							
					START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	App. III Metals (1)	App. IV Metals (2, AP-3)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	TEMP in C	Received on Ice (Y/N)
HGMW-122	DW	WT	G	G	10/21/19	11:36	10/21/19	11:55	17	4	1										17.05				
HGWC-124	DW	WT	G	G	10/21/19	13:18	10/21/19	13:35	17	4	1										18.30				
HGWC-121A	DW	WT	G	G	10/21/19	16:54	10/21/19	16:59	17	4	1										17.05				
Handwritten: 10-21-2019																									
Handwritten: [Signature]																									

PRINT Name of SAMPLER: Dan Gibbs
SIGNATURE of SAMPLER: [Signature]DATE Signed: 10-21-2019

Face Analytical

Client: BM

Due Date: 11/19/19

MO#: 2624782

Due Date: 10/29/19
 CLIENT: GPower-CR
 M: BM

Counter: Fed Ex UPS Other

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no

Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags Other

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature: 5.8

Biological Tissue is Frozen: yes no

Date and initials of person examining contents: _____

Temp should be above freezing to 6°C

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 (<7hr):	<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.
-Face 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 type="checkbox"/> Yes <input checked="" 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/D/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 type="checkbox"/> Yes <input type="checkbox"/> No	
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Custody Seals Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Face Trip Blank Lot # (if purchased):		

Client Notification/Resolution:

Field Data Required? Y / N

Person Contacted:

Date/Time:

Comments/Resolution:

3000 W28

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 21, 2019

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

RE: Project: PLANT HAMMOND
Pace Project No.: 2624785

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2019. 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
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND
Pace Project No.: 2624785

Pace Analytical Services Pennsylvania

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND

Pace Project No.: 2624785

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624785001	HGWC-120	Water	10/22/19 08:39	10/24/19 10:07
2624785002	FD-01	Water	10/22/19 00:00	10/24/19 10:07

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND

Pace Project No.: 2624785

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624785001	HGWC-120	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624785002	FD-01	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

Pace Project No.: 2624785

Sample: HGWC-120 **Lab ID: 2624785001** Collected: 10/22/19 08:39 Received: 10/24/19 10:07 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.760 ± 0.379 (0.563) C:89% T:NA	pCi/L	11/15/19 07:35	13982-63-3	
Radium-228	EPA 9320	-0.382 ± 0.393 (0.996) C:80% T:84%	pCi/L	11/12/19 17:47	15262-20-1	
Total Radium	Total Radium Calculation	0.760 ± 0.772 (1.56)	pCi/L	11/19/19 09:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT HAMMOND

Pace Project No.: 2624785

Sample: FD-01 **Lab ID: 2624785002** Collected: 10/22/19 00:00 Received: 10/24/19 10:07 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.420 ± 0.252 (0.346) C:92% T:NA	pCi/L	11/15/19 10:17	13982-63-3	
Radium-228	EPA 9320	0.485 ± 0.505 (1.05) C:78% T:81%	pCi/L	11/12/19 17:49	15262-20-1	
Total Radium	Total Radium Calculation	0.905 ± 0.757 (1.40)	pCi/L	11/19/19 09:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT HAMMOND

Pace Project No.: 2624785

QC Batch: 369310

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2624785001, 2624785002

METHOD BLANK: 1791698

Matrix: Water

Associated Lab Samples: 2624785001, 2624785002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.590 ± 0.307 (0.405) C:93% T:NA	pCi/L	11/15/19 07:34	

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

Pace Project No.: 2624785

QC Batch: 369311

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2624785001, 2624785002

METHOD BLANK: 1791699

Matrix: Water

Associated Lab Samples: 2624785001, 2624785002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.174 ± 0.362 (0.799) C:80% T:87%	pCi/L	11/12/19 15:54	

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
Pace Project No.: 2624785

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
Pace Project No.: 2624785

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624785001	HGWC-120	EPA 9315	369310		
2624785002	FD-01	EPA 9315	369310		
2624785001	HGWC-120	EPA 9320	369311		
2624785002	FD-01	EPA 9320	369311		
2624785001	HGWC-120	Total Radium Calculation	371617		
2624785002	FD-01	Total Radium Calculation	371617		

REPORT OF LABORATORY ANALYSIS

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WO#: 2624786

WO#: 2624785



2624786

2624785

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: 5/20/14

Section B

Required Project Information:

Report To: Jugu Abraham
 Copy To: Lauren Petty, Geosynlec
 Purchase Order #: SCS10382715
 Project Name: Plant Hammond
 Project #: 64658

Invoice Information:

Attention: scalvoices@southernco.com
 Company Name:
 Address:
 Paces Project Manager: betsy.mcdaniel@pacelabs.com
 Paces Profile #: 327 (AP)

Regulatory Agency

GA

ITEM #	MATRIX	CODE	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY/AFFILIATION	DATE	TIME	RECEIVED ON	TEMP in C	Ice (Y/N)	Cooled (Y/N)	Sealed (Y/N)	Samples Intact (Y/N)
			START	END													
1	HWAC-120	DW	10/22/14	08:12	10/22/14	08:59	10/22/14	18:00	Shad Kudro / GCS	10/22	19:00						
2	ED-04	WT	10/22/14	10:00	10/22/14	10:00	10/22	2:00	Shad Kudro / GCS	10/24	15:07		51.3	Y	Y	Y	Y
3		WW															
4		P															
5		SL															
6		OL															
7		WP															
8		AS															
9		OT															
10		IS															
11																	
12																	

Requested Analysis Filtered (Y/N)

App III Metals (1)	Y
App IV Metals (2, AP-3)	Y
TDS, Cl, F, SO4	Y
Radium 226/228	Y

Preservatives

Unpreserved	
H2SO4	3
HNO3	3
HCl	
NaOH	
Na2S2O3	
Methanol	
Other	

OF CONTAINERS

4
4

MATRIX CODE (see valid codes to left)

6	6
6	6

SAMPLE TYPE (G-GRAB C-COMP)

6	6
6	6

SAMPLE TEMP AT COLLECTION

ADDITIONAL COMMENT

ADG
 10-22-2014

ADDITIONAL COMMENT
 (1) App III Metals = B, Ca
 (2) AP-3 App IV Metals = Bz, Cr, Co, Pb, Li, Mo

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: *Jai GBB*
 SIGNATURE OF SAMPLER: *Jai GBB*

DATE Signed: 10-22-2014



WO#: 2624786

WO#: 2624785

Client: PM: BM Due Date: 10/31/19 CLIENT: GAPower-CCR

Client: PM: BM Due Date: 11/21/19 CLIENT: GAPower-CCR

Courier: Fed Ex UPS U.S. Mail Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used THR 214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 5.3 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and initials of person examining contents: _____

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:		
All containers needing preservation have been checked	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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: _____

3000 W28

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)

December 13, 2019

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

RE: Project: PLANT HAMMOND
Pace Project No.: 2624786

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2019. 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,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND

Pace Project No.: 2624786

Pace Analytical Services Atlanta

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

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND

Pace Project No.: 2624786

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624786001	HGWC-120	Water	10/22/19 08:39	10/24/19 10:07
2624786002	FD-01	Water	10/22/19 00:00	10/24/19 10:07

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND

Pace Project No.: 2624786

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624786001	HGWC-120	EPA 6020B	CSW	8
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624786002	FD-01	EPA 6020B	CSW	8
		SM 2540C	MZP	1
		EPA 300.0	MWB	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2624786

Sample: HGWC-120		Lab ID: 2624786001		Collected: 10/22/19 08:39		Received: 10/24/19 10:07		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								
Barium	0.051	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 02:27	7440-39-3		
Boron	1.0	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 02:27	7440-42-8		
Calcium	171	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 02:32	7440-70-2		
Chromium	ND	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 02:27	7440-47-3		
Cobalt	0.0031J	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 02:27	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 02:27	7439-92-1		
Lithium	0.030J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 13:20	7439-93-2		
Molybdenum	0.040	mg/L	0.010	0.00095	1	11/01/19 16:00	11/04/19 02:27	7439-98-7		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	693	mg/L	10.0	10.0	1		10/29/19 13:02			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	3.4	mg/L	1.0	0.024	1		10/31/19 07:37	16887-00-6		
Fluoride	0.53	mg/L	0.30	0.029	1		10/31/19 07:37	16984-48-8		
Sulfate	266	mg/L	10.0	0.17	10		10/31/19 09:29	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2624786

Sample: FD-01		Lab ID: 2624786002		Collected: 10/22/19 00:00	Received: 10/24/19 10:07	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								
Barium	0.052	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 02:38	7440-39-3		
Boron	1.0	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 02:38	7440-42-8		
Calcium	176	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 02:44	7440-70-2		
Chromium	ND	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 02:38	7440-47-3		
Cobalt	0.0032J	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 02:38	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 02:38	7439-92-1		
Lithium	0.030J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 13:25	7439-93-2		
Molybdenum	0.041	mg/L	0.010	0.00095	1	11/01/19 16:00	11/04/19 02:38	7439-98-7		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	709	mg/L	10.0	10.0	1		10/29/19 13:03			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	3.2	mg/L	1.0	0.024	1		10/31/19 05:44	16887-00-6		
Fluoride	0.56	mg/L	0.30	0.029	1		10/31/19 05:44	16984-48-8		
Sulfate	240	mg/L	20.0	0.34	20		10/31/19 17:13	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2624786

QC Batch: 38024 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624786001, 2624786002

METHOD BLANK: 172889 Matrix: Water
Associated Lab Samples: 2624786001, 2624786002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	mg/L	ND	0.010	0.00049	11/04/19 01:12	
Boron	mg/L	0.0059J	0.040	0.0049	11/04/19 01:12	
Calcium	mg/L	ND	0.10	0.011	11/04/19 01:12	
Chromium	mg/L	ND	0.010	0.00039	11/04/19 01:12	
Cobalt	mg/L	ND	0.0050	0.00030	11/04/19 01:12	
Lead	mg/L	ND	0.0050	0.000046	11/04/19 01:12	
Lithium	mg/L	ND	0.030	0.00078	11/04/19 01:12	
Molybdenum	mg/L	ND	0.010	0.00095	11/04/19 01:12	

LABORATORY CONTROL SAMPLE: 172890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.1	0.10	103	80-120	
Boron	mg/L	1	1.2	116	80-120	
Calcium	mg/L	1	1.1	106	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.11	112	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172891 172892

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2624772007 Result	Spike Conc.	Spike Conc.	MS Result						
Barium	mg/L	0.22	0.1	0.1	0.32	0.31	99	98	75-125	0	20
Boron	mg/L	3.8	1	1	5.1	5.2	85	95	75-125	2	20
Calcium	mg/L	177	1	1	170	179	-693	243	75-125	5	20 M6
Chromium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20
Cobalt	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	0	20
Lead	mg/L	ND	0.1	0.1	0.092	0.090	92	90	75-125	2	20
Lithium	mg/L	0.29	0.1	0.1	0.36	0.36	73	75	75-125	1	20 M1
Molybdenum	mg/L	0.49	0.1	0.1	0.58	0.60	89	105	75-125	3	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND

Pace Project No.: 2624786

QC Batch: 37858	Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0	Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624786001	

METHOD BLANK: 171795 Matrix: Water

Associated Lab Samples: 2624786001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.032J	1.0	0.024	10/30/19 20:37	
Fluoride	mg/L	ND	0.30	0.029	10/30/19 20:37	
Sulfate	mg/L	0.36J	1.0	0.017	10/30/19 20:37	

LABORATORY CONTROL SAMPLE: 171796

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.7	107	90-110	
Fluoride	mg/L	10	10.9	109	90-110	
Sulfate	mg/L	10	10.9	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171797 171798

Parameter	Units	2624403001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	123	100	100	328	328	205	205	90-110	0	15	M6
Fluoride	mg/L	1.0	100	100	107	106	106	105	90-110	0	15	

MATRIX SPIKE SAMPLE: 171799

Parameter	Units	2624685004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	18.0	10	26.2	82	90-110	M1
Fluoride	mg/L	0.20J	10	10.9	107	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2624786

QC Batch: 37870 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624786002

METHOD BLANK: 171906 Matrix: Water
Associated Lab Samples: 2624786002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/31/19 04:37	
Fluoride	mg/L	ND	0.30	0.029	10/31/19 04:37	
Sulfate	mg/L	ND	1.0	0.017	10/31/19 04:37	

LABORATORY CONTROL SAMPLE: 171907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	5	5.0	101	90-110	
Sulfate	mg/L	5	5.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171908 171909

Parameter	Units	2624786002		171909		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	3.2	10	13.0	13.2	97	100	90-110	2	15	
Fluoride	mg/L	0.56	10	10.6	10.9	100	103	90-110	3	15	

MATRIX SPIKE SAMPLE: 171910

Parameter	Units	2624800005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.6	10	14.7	101	90-110	
Fluoride	mg/L	0.099J	10	10.6	105	90-110	
Sulfate	mg/L	23.2	10	28.2	50	90-110 M1	

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QUALIFIERS

Project: PLANT HAMMOND

Pace Project No.: 2624786

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

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
Pace Project No.: 2624786

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624786001	HGWC-120	EPA 3005A	38024	EPA 6020B	38049
2624786002	FD-01	EPA 3005A	38024	EPA 6020B	38049
2624786001	HGWC-120	SM 2540C	37734		
2624786002	FD-01	SM 2540C	37734		
2624786001	HGWC-120	EPA 300.0	37858		
2624786002	FD-01	EPA 300.0	37870		

REPORT OF LABORATORY ANALYSIS

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WO#: 2624786

WO#: 2624785



2624786

2624785

Section A
Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404) 506-7339
 Requested Due Date: 5/20/19

Section B
Required Project Information:
 Report To: Jugu Abraham
 Copy To: Lauren Petty, Geosynlec
 Purchase Order #: SCS10382715
 Project Name: Plant Hammond
 Project #: 64658

Invoice Information:
 Attention: scabinvoices@southernco.com
 Company Name:
 Address:
 Peco Quate
 Peco Project Manager: betsy.mcdaniel@pecoalabs.com
 Peco Profile #: 327 (AP)
 State / Location: GA

Page: 1 of 1

ITEM #	MATRIX CODE (see valid codes to left)	COLLECTED		DATE	TIME	DATE	TIME	RECEIVED BY/AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Cooled (Y/N)	Sealed (Y/N)	Samples Intact (Y/N)
		START	END												
1	HWAC-120	10/22/19	08:12	10/22/19	08:59	10/22	18:00	Shad Kudva / GCS	10/22	19:00					
2	ED-06	10/22/19	10:00	10/22/19	10:00	10/22	20:00	Shad Kudva / GCS	10/24	19:07	513	Y	Y	Y	Y
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

ADDITIONAL COMMENT:
 (1) App III Metals = B, Ca
 (2) AP-3 App IV Metals = B, Cr, Co, Pb, Li, Mo

SAMPLE NAME AND SIGNATURE:
 PRINT Name of SAMPLER: *Shad Kudva*
 SIGNATURE OF SAMPLER: *[Signature]*
 DATE Signed: 10-22-2019



WO#: 2624786

WO#: 2624785

Client: PM: BM Due Date: 10/31/19 CLIENT: GAPower-CCR

PM: BM Due Date: 11/21/19 CLIENT: GAPower-CCR

Courier: Fed Ex UPS U.S. Mail Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used THR 214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 5.3 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and initials of person examining contents: _____

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:		
All containers needing preservation have been checked	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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: _____

3000 W28

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 21, 2019

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

RE: Project: PLANT HAMMOND
Pace Project No.: 2624802

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2019. 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
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND
Pace Project No.: 2624802

Pace Analytical Services Pennsylvania

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

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

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SAMPLE SUMMARY

Project: PLANT HAMMOND
Pace Project No.: 2624802

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624802001	FB-01	Water	10/22/19 17:10	10/24/19 10:07

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND
Pace Project No.: 2624802

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624802001	FB-01	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

Pace Project No.: 2624802

Sample: FB-01 **Lab ID: 2624802001** Collected: 10/22/19 17:10 Received: 10/24/19 10:07 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.270 ± 0.222 (0.392) C:97% T:NA	pCi/L	11/15/19 10:17	13982-63-3	
Radium-228	EPA 9320	-0.147 ± 0.412 (0.993) C:83% T:84%	pCi/L	11/12/19 17:50	15262-20-1	
Total Radium	Total Radium Calculation	0.270 ± 0.634 (1.39)	pCi/L	11/19/19 09:18	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT HAMMOND

Pace Project No.: 2624802

QC Batch: 369310

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2624802001

METHOD BLANK: 1791698

Matrix: Water

Associated Lab Samples: 2624802001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.590 ± 0.307 (0.405) C:93% T:NA	pCi/L	11/15/19 07:34	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT HAMMOND

Pace Project No.: 2624802

QC Batch: 369311

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2624802001

METHOD BLANK: 1791699

Matrix: Water

Associated Lab Samples: 2624802001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.174 ± 0.362 (0.799) C:80% T:87%	pCi/L	11/12/19 15:54	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT HAMMOND
Pace Project No.: 2624802

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
Pace Project No.: 2624802

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624802001	FB-01	EPA 9315	369310		
2624802001	FB-01	EPA 9320	369311		
2624802001	FB-01	Total Radium Calculation	371617		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Pace Analytical

Cli

WO# : 2624803

IO# : 2624802

Courier: Fed Ex UPS
Tracking #: _____

PM: BM Due Date: 10/31/19
CLIENT: GAPower-CCR

: BM Due Date: 11/21/19
CLIENT: GAPower-CCR

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used JRC 214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.3 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and Initials of person examining contents: _____

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:		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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: _____

3000 W28

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)

December 17, 2019

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

RE: Project: PLANT HAMMOND
Pace Project No.: 2624803

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2019. 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,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND
Pace Project No.: 2624803

Pace Analytical Services Atlanta

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
Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND

Pace Project No.: 2624803

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624803001	FB-01	Water	10/22/19 17:10	10/24/19 10:07

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND
Pace Project No.: 2624803

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624803001	FB-01	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2624803

Sample: FB-01		Lab ID: 2624803001		Collected: 10/22/19 17:10		Received: 10/24/19 10:07		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	0.00027	1	11/01/19 16:00	11/04/19 05:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 05:07	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 05:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 14:49	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 14:49	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 05:07	7440-43-9	
Calcium	0.011J	mg/L	0.10	0.011	1	11/01/19 16:00	11/04/19 05:07	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 05:07	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 05:07	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 05:07	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 14:49	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	11/01/19 16:00	11/04/19 05:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	11/01/19 16:00	11/04/19 05:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	11/01/19 16:00	11/04/19 05:07	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	10/29/19 09:50	10/29/19 16:31	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/29/19 13:15		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	ND	mg/L	1.0	0.024	1		10/31/19 12:24	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/31/19 12:24	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/31/19 12:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2624803

QC Batch: 37720 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2624803001

METHOD BLANK: 171214 Matrix: Water
Associated Lab Samples: 2624803001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/29/19 15:19	

LABORATORY CONTROL SAMPLE: 171215

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171216 171217

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2624786001 Result	Spike Conc.	Spike Conc.	Result						
Mercury	mg/L				0.0027	0.0025			6	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
Pace Project No.: 2624803

QC Batch: 38024 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624803001

METHOD BLANK: 172889 Matrix: Water
Associated Lab Samples: 2624803001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	11/04/19 01:12	
Arsenic	mg/L	ND	0.0050	0.00035	11/04/19 01:12	
Barium	mg/L	ND	0.010	0.00049	11/04/19 01:12	
Beryllium	mg/L	ND	0.0030	0.000074	11/04/19 01:12	
Boron	mg/L	0.0059J	0.040	0.0049	11/04/19 01:12	
Cadmium	mg/L	ND	0.0025	0.00011	11/04/19 01:12	
Calcium	mg/L	ND	0.10	0.011	11/04/19 01:12	
Chromium	mg/L	ND	0.010	0.00039	11/04/19 01:12	
Cobalt	mg/L	ND	0.0050	0.00030	11/04/19 01:12	
Lead	mg/L	ND	0.0050	0.000046	11/04/19 01:12	
Lithium	mg/L	ND	0.030	0.00078	11/04/19 01:12	
Molybdenum	mg/L	ND	0.010	0.00095	11/04/19 01:12	
Selenium	mg/L	ND	0.010	0.0013	11/04/19 01:12	
Thallium	mg/L	ND	0.0010	0.000052	11/04/19 01:12	

LABORATORY CONTROL SAMPLE: 172890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	107	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.11	114	80-120	
Boron	mg/L	1	1.2	116	80-120	
Cadmium	mg/L	0.1	0.11	106	80-120	
Calcium	mg/L	1	1.1	106	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.11	112	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172891 172892

Parameter	Units	2624772007 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	106	104	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND

Pace Project No.: 2624803

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172891												172892	
Parameter	Units	2624772007	MS	MSD	MS	MSD	MS	MSD	% Rec	Max			
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Arsenic	mg/L	2.5	0.1	0.1	2.6	2.6	43	106	75-125	2	20	M6	
Barium	mg/L	0.22	0.1	0.1	0.32	0.31	99	98	75-125	0	20		
Beryllium	mg/L	ND	0.1	0.1	0.090	0.086	90	86	75-125	5	20		
Boron	mg/L	3.8	1	1	5.1	5.2	85	95	75-125	2	20		
Cadmium	mg/L	ND	0.1	0.1	0.11	0.10	107	103	75-125	4	20		
Calcium	mg/L	177	1	1	170	179	-693	243	75-125	5	20	M6	
Chromium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Cobalt	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	0	20		
Lead	mg/L	ND	0.1	0.1	0.092	0.090	92	90	75-125	2	20		
Lithium	mg/L	0.29	0.1	0.1	0.36	0.36	73	75	75-125	1	20	M1	
Molybdenum	mg/L	0.49	0.1	0.1	0.58	0.60	89	105	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20		
Thallium	mg/L	ND	0.1	0.1	0.093	0.092	93	92	75-125	2	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2624803

QC Batch: 37870 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624803001

METHOD BLANK: 171906 Matrix: Water
Associated Lab Samples: 2624803001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/31/19 04:37	
Fluoride	mg/L	ND	0.30	0.029	10/31/19 04:37	
Sulfate	mg/L	ND	1.0	0.017	10/31/19 04:37	

LABORATORY CONTROL SAMPLE: 171907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	5	5.0	101	90-110	
Sulfate	mg/L	5	5.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171908 171909

Parameter	Units	2624786002		171909		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	3.2	10	13.0	13.2	97	100	90-110	2	15	
Fluoride	mg/L	0.56	10	10.6	10.9	100	103	90-110	3	15	

MATRIX SPIKE SAMPLE: 171910

Parameter	Units	2624800005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.6	10	14.7	101	90-110	
Fluoride	mg/L	0.099J	10	10.6	105	90-110	
Sulfate	mg/L	23.2	10	28.2	50	90-110 M1	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT HAMMOND
Pace Project No.: 2624803

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

- | | |
|----|---|
| 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

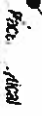
Project: PLANT HAMMOND

Pace Project No.: 2624803

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624803001	FB-01	EPA 3005A	38024	EPA 6020B	38049
2624803001	FB-01	EPA 7470A	37720	EPA 7470A	37761
2624803001	FB-01	SM 2540C	37735		
2624803001	FB-01	EPA 300.0	37870		

REPORT OF LABORATORY ANALYSIS

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Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Mamer Road
 Atlanta, GA 30339
 Phone: (404) 506-7239
 Fax: (404) 506-7239
 Email: jlabraham@scs-hammond.com
 Requested Due Date: 5/28/14

Section B
 Required Project Information:
 Report To: Joy Azehin
 Copy To: Lauren Palfy, Geosynce
 Purchase Order #: SCS10382775
 Project Name: Plant Hammond
 Project #: GCS6581

WO#: 2624803

2624803

WO#: 2624802

2624802

Company Name	Georgia Power - Coal Combustion Residuals	Address	2480 Mamer Road	Atlanta, GA 30339
Phone	(404) 506-7239	Fax	(404) 506-7239	
Email	jlabraham@scs-hammond.com	Project Name	Plant Hammond	Project #
Requested Due Date	5/28/14	Purchase Order #	SCS10382775	
		Address		
		Company Name	Georgia Power - Coal Combustion Residuals	
		Project Name	Plant Hammond	Project #
		Face Project Manager	betsy.mcdaniel@scs-hammond.com	
		Face Profile #	327 (M)	
		State / Location	GA	

ITEM #	SAMPLE ID One Character per box, (A-Z, 0-9, -,) Sample IDs must be unique	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analytes Test	Residual Chlorine (Y/N)				
		DATE	TIME	DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol			Other	Y/N	Y/N	
1	FB-01	5/6	10/24	17:00	10/24	17:12	1													
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	HELPCHECKED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
(1) App III Metals - 8 Cs	Dan Gross / Geosynce	10/24	1800	Dan Gross / Geosynce	10/22	1800	Y
(2, AP-4) App IV Metals - As, Ba, Be, Cd, Cr, Cu, Pb, U, Mo	Dan Gross / Geosynce	10/22	2000	Dan Gross / Geosynce	10/22	1800	Y

SAMPLER NAME AND SIGNATURE: Dan Gross

PRINT Name of SAMPLER: Dan Gross

SIGNATURE of SAMPLER: [Signature]

DATE Signed: 10/22/2014

TEMP in C

Received on for (Y/N)

Coolbox Sealed (Y/N)

Cooler (Y/N)

Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client

WO# : 2624803

IO# : 2624802

Courier: Fed Ex UPS
Tracking #: _____

PM: BM Due Date: 10/31/19
CLIENT: GAPower-CCR

: BM Due Date: 11/21/19
CLIENT: GAPower-CCR

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used JRC 214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.3 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and Initials of person examining contents: _____

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:		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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: _____

3000 W28

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)

January 21, 2020

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

RE: Project: PLANT HAMMOND
Pace Project No.: 2627482

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on January 06, 2020. 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,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND

Pace Project No.: 2627482

Pace Analytical Services Atlanta

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

Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND
Pace Project No.: 2627482

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2627482001	MW-32	Water	01/03/20 15:00	01/06/20 11:22
2627482002	FB-01	Water	01/03/20 16:05	01/06/20 11:22
2627482003	EB-01	Water	01/03/20 16:10	01/06/20 11:22

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND

Pace Project No.: 2627482

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2627482001	MW-32	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2627482002	FB-01	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2627482003	EB-01	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PLANT HAMMOND

Pace Project No.: 2627482

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2627482001	MW-32					
EPA 6010D	Calcium	150	mg/L	10.0	01/07/20 20:34	
EPA 6020B	Boron	1.1	mg/L	0.10	01/07/20 19:15	
EPA 6020B	Molybdenum	0.060	mg/L	0.010	01/07/20 19:15	
SM 2540C	Total Dissolved Solids	645	mg/L	10.0	01/07/20 11:38	
EPA 300.0 Rev 2.1 1993	Chloride	2.4	mg/L	1.0	01/14/20 16:10	
EPA 300.0 Rev 2.1 1993	Fluoride	0.36	mg/L	0.30	01/14/20 16:10	
EPA 300.0 Rev 2.1 1993	Sulfate	210	mg/L	5.0	01/14/20 22:01	M1
2627482003	EB-01					
SM 2540C	Total Dissolved Solids	20.0	mg/L	10.0	01/07/20 11:38	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2627482

Sample: MW-32		Lab ID: 2627482001		Collected: 01/03/20 15:00		Received: 01/06/20 11:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Calcium	150	mg/L	10.0	1.4	10	01/07/20 13:28	01/07/20 20:34	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	1.1	mg/L	0.10	0.0049	1	01/07/20 13:32	01/07/20 19:15	7440-42-8	
Molybdenum	0.060	mg/L	0.010	0.00095	1	01/07/20 13:32	01/07/20 19:15	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	645	mg/L	10.0	10.0	1		01/07/20 11:38		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Chloride	2.4	mg/L	1.0	0.60	1		01/14/20 16:10	16887-00-6	
Fluoride	0.36	mg/L	0.30	0.050	1		01/14/20 16:10	16984-48-8	
Sulfate	210	mg/L	5.0	2.5	5		01/14/20 22:01	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2627482

Sample: FB-01		Lab ID: 2627482002		Collected: 01/03/20 16:05		Received: 01/06/20 11:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Calcium	ND	mg/L	1.0	0.14	1	01/07/20 13:28	01/07/20 20:10	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	ND	mg/L	0.10	0.0049	1	01/07/20 13:32	01/07/20 19:32	7440-42-8	
Molybdenum	ND	mg/L	0.010	0.00095	1	01/07/20 13:32	01/07/20 19:32	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		01/07/20 11:38		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Chloride	ND	mg/L	1.0	0.60	1		01/15/20 19:32	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		01/15/20 19:32	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		01/15/20 19:32	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2627482

Sample: EB-01		Lab ID: 2627482003		Collected: 01/03/20 16:10		Received: 01/06/20 11:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Calcium	ND	mg/L	1.0	0.14	1	01/07/20 13:28	01/07/20 20:15	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	ND	mg/L	0.10	0.0049	1	01/07/20 13:32	01/07/20 19:38	7440-42-8	
Molybdenum	ND	mg/L	0.010	0.00095	1	01/07/20 13:32	01/07/20 19:38	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	20.0	mg/L	10.0	10.0	1		01/07/20 11:38		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Chloride	ND	mg/L	1.0	0.60	1		01/15/20 19:47	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		01/15/20 19:47	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		01/15/20 19:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2627482

QC Batch: 41627 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2627482001, 2627482002, 2627482003

METHOD BLANK: 189251 Matrix: Water
Associated Lab Samples: 2627482001, 2627482002, 2627482003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	01/07/20 19:51	

LABORATORY CONTROL SAMPLE: 189252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 189253 189254

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2627501001 Result	Spike Conc.	Spike Conc.	Conc.								
Calcium	mg/L	8.5	1	1	9.6	9.7	105	124	75-125	2	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND

Pace Project No.: 2627482

QC Batch: 41623 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

Associated Lab Samples: 2627482001, 2627482002, 2627482003

METHOD BLANK: 189239 Matrix: Water

Associated Lab Samples: 2627482001, 2627482002, 2627482003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.0049	01/07/20 18:23	
Molybdenum	mg/L	ND	0.010	0.00095	01/07/20 18:23	

LABORATORY CONTROL SAMPLE: 189240

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.1	110	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 189241 189242

Parameter	Units	2627458001		189241		189242		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Boron	mg/L	ND	1	1	1.1	1.2	104	109	75-125	4	20
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.11	103	104	75-125	1	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND

Pace Project No.: 2627482

QC Batch: 41612 Analysis Method: SM 2540C
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
 Associated Lab Samples: 2627482001, 2627482002, 2627482003

LABORATORY CONTROL SAMPLE: 189168

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	386	96	84-108	

SAMPLE DUPLICATE: 189169

Parameter	Units	2627461001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	457	443	3	10	

SAMPLE DUPLICATE: 189170

Parameter	Units	2627495002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	16200	15600	4	10	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2627482

QC Batch: 519174 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2627482001

METHOD BLANK: 2778878 Matrix: Water
Associated Lab Samples: 2627482001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	01/14/20 12:49	
Fluoride	mg/L	ND	0.10	0.050	01/14/20 12:49	
Sulfate	mg/L	ND	1.0	0.50	01/14/20 12:49	

LABORATORY CONTROL SAMPLE: 2778879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.4	97	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	50	49.0	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2778880 2778881

Parameter	Units	2627482001		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result						
Chloride	mg/L	2.4	50	50	51.9	53.4	99	102	90-110	3	10		
Fluoride	mg/L	0.36	2.5	2.5	2.9	3.0	103	106	90-110	3	10		
Sulfate	mg/L	210	50	50	278	279	136	138	90-110	0	10	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2778882 2778883

Parameter	Units	92460474008		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result						
Chloride	mg/L	11.6	50	50	62.3	63.2	101	103	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.3	2.3	90	92	90-110	2	10		
Sulfate	mg/L	7.6	50	50	58.7	59.5	102	104	90-110	1	10		

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QUALITY CONTROL DATA

Project: PLANT HAMMOND

Pace Project No.: 2627482

QC Batch: 519389 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2627482002, 2627482003

METHOD BLANK: 2779830 Matrix: Water

Associated Lab Samples: 2627482002, 2627482003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	01/15/20 15:48	
Fluoride	mg/L	ND	0.10	0.050	01/15/20 15:48	
Sulfate	mg/L	ND	1.0	0.50	01/15/20 15:48	

LABORATORY CONTROL SAMPLE: 2779831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.5	101	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	50	48.3	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2779832 2779833

Parameter	Units	2627420001		2779832		2779833		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	8.3	50	50	61.0	60.9	105	105	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.5	93	98	90-110	4	10		
Sulfate	mg/L	589	50	50	620	623	62	67	90-110	0	10 M6		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2779834 2779835

Parameter	Units	2627481003		2779834		2779835		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	ND	50	50	52.5	52.2	105	104	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.5	104	101	90-110	2	10		
Sulfate	mg/L	ND	50	50	52.6	52.2	105	104	90-110	1	10		

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QUALIFIERS

Project: PLANT HAMMOND

Pace Project No.: 2627482

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.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND
Pace Project No.: 2627482

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2627482001	MW-32	EPA 3010A	41627	EPA 6010D	41637
2627482002	FB-01	EPA 3010A	41627	EPA 6010D	41637
2627482003	EB-01	EPA 3010A	41627	EPA 6010D	41637
2627482001	MW-32	EPA 3005A	41623	EPA 6020B	41638
2627482002	FB-01	EPA 3005A	41623	EPA 6020B	41638
2627482003	EB-01	EPA 3005A	41623	EPA 6020B	41638
2627482001	MW-32	SM 2540C	41612		
2627482002	FB-01	SM 2540C	41612		
2627482003	EB-01	SM 2540C	41612		
2627482001	MW-32	EPA 300.0 Rev 2.1 1993	519174		
2627482002	FB-01	EPA 300.0 Rev 2.1 1993	519389		
2627482003	EB-01	EPA 300.0 Rev 2.1 1993	519389		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2627482

Client Name: Georgia Power

PN: KH Due Date: 01/20/20
CLIENT: 26-GA Power

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 THA 214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 6.0°C
Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: _____

		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 checked="" type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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, WT</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, W-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed <u>AW 1/6/20</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

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

3000 W28

Project Manager Review: _____ Date: _____

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

February 04, 2020

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

RE: Project: Plant Hammond
Pace Project No.: 2628191

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on January 23, 2020. 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,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond

Pace Project No.: 2628191

Pace Analytical Services Atlanta

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

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2628191

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628191001	MW-32	Water	01/22/20 12:27	01/23/20 13:58
2628191002	EB-01	Water	01/22/20 14:32	01/23/20 13:58
2628191003	FB-01	Water	01/22/20 14:48	01/23/20 13:58

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2628191

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2628191001	MW-32	EPA 6020B	CSW	1
2628191002	EB-01	EPA 6020B	CSW	1
2628191003	FB-01	EPA 6020B	CSW	1

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant Hammond
Pace Project No.: 2628191

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628191001	MW-32					
EPA 6020B	Molybdenum	0.059	mg/L	0.010	01/31/20 19:52	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2628191

Sample: MW-32		Lab ID: 2628191001		Collected: 01/22/20 12:27		Received: 01/23/20 13:58		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							
Molybdenum	0.059	mg/L	0.010	0.00095	1	01/30/20 17:00	01/31/20 19:52	7439-98-7	

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2628191

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: EB-01									
Lab ID: 2628191002									
Collected: 01/22/20 14:32 Received: 01/23/20 13:58 Matrix: Water									
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Molybdenum	ND	mg/L	0.010	0.00095	1	01/30/20 17:00	01/31/20 19:58	7439-98-7	

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2628191

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: FB-01									
Lab ID: 2628191003									
Collected: 01/22/20 14:48 Received: 01/23/20 13:58 Matrix: Water									
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Molybdenum	ND	mg/L	0.010	0.00095	1	01/30/20 17:00	01/31/20 20:04	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2628191

QC Batch: 42642 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628191001, 2628191002, 2628191003

METHOD BLANK: 194851 Matrix: Water

Associated Lab Samples: 2628191001, 2628191002, 2628191003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Molybdenum	mg/L	ND	0.010	0.00095	01/31/20 19:24	

LABORATORY CONTROL SAMPLE: 194852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Molybdenum	mg/L	0.1	0.10	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 194853 194854

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2628247001 Result	Spike Conc.	Spike Conc.	Conc.								
Molybdenum	mg/L	ND	0.1	0.1	0.097	0.10	96	100	75-125	4	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond

Pace Project No.: 2628191

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond

Pace Project No.: 2628191

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628191001	MW-32	EPA 3005A	42642	EPA 6020B	42652
2628191002	EB-01	EPA 3005A	42642	EPA 6020B	42652
2628191003	FB-01	EPA 3005A	42642	EPA 6020B	42652

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	Attention: scsinvoices@southemco.com	Company Name:	Company Name:	
Address: 2480 Warner Road	Copy To: Lauren Peaty, Geosyntec		Address:	Address:	
Allianta, GA 30339			Purchase Order #:	Pace Quote:	
Email: jbraham@southemco.com	Project Name: Plant Hammond	Project Manager: kevin.herring@pacelabs.com			
Phone: (404)506-7239	Fax:	Pace Profile #: 2912 (AP)			
Requested Due Date: Standard 5-day TAT	Project #: 646301				

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES						ANALYSES TEST	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
			START	END				H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol				
1	MW	-32	01/20	12:30	01/22	12:37	1	1									
2	EB	-01	01/22	14:32	01/22	14:32	1	1									
3	FB	-01	01/22	14:48	01/22	14:48	1	1									
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

GV 01/22/20

WO#: 2628191

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on	Custody	Sealed	Cooler	Samples
(1) EB-01 and FB-01 will be reported in all SDGs with their respective analyte list.	Great Waters/Geosyntec	01/22/20	1310	Malina Whitham/Geosyntec	01/24/20	1710						
	Malina Whitham/Geosyntec	01/23/20	1212	Shirley/Geosyntec	01/23/20	12:15						
	Shirley/Geosyntec	01/23/20	1:57	Kevin Herring/PACE	01/24/20	13:57	4.0	Y	Y	Y	Y	Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Great Waters
 SIGNATURE of SAMPLER: *Kevin Herring*
 DATE Signed: 01/22/20



Sample Condition Upon Receipt

WO#: 2628191

Client Name: Georgia Power

PM: KH

Due Date: 02/06/20

CLIENT: 26-GA Power

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 THA 230 Type of Ice: Ice Blue None Samples on ice, cooling process has begun

Cooler Temperature 4.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and initials of person examining contents: AW 1/23/20

		Comments:
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

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

Project Manager Review: _____ Date: _____

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

April 29, 2020

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

RE: Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 25, 2020 and March 26, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Asheville
- Pace Analytical Services - Atlanta, GA

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

Sincerely,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-3 2ND SEMIANNUAL

Pace Project No.: 2630417

Pace Analytical Services Atlanta

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

Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2630417001	HGWA-122	Water	03/24/20 11:50	03/25/20 09:41
2630417002	HGWC-124	Water	03/24/20 16:20	03/25/20 09:41
2630417003	HGWC-120	Water	03/25/20 09:40	03/26/20 11:10
2630417004	FD-03	Water	03/25/20 09:40	03/26/20 11:10
2630417005	HGWC-121A	Water	03/25/20 10:51	03/26/20 11:10
2630417006	MW-32	Water	03/25/20 14:06	03/26/20 11:10
2630417007	FB-03	Water	03/25/20 18:20	03/26/20 11:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630417001	HGWA-122	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	7	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630417002	HGWC-124	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	7	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630417003	HGWC-120	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	7	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630417004	FD-03	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	7	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630417005	HGWC-121A	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	7	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630417006	MW-32	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	7	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630417007	FB-03	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	7	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-GA = Pace Analytical Services - Atlanta, GA

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 2ND SEMIANNUAL

Pace Project No.: 2630417

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630417001	HGWA-122					
	Field pH	7.08	Std. Units		03/30/20 10:05	
EPA 6010D	Calcium	81.2	mg/L	1.0	03/31/20 19:14	M1
EPA 6020B	Barium	0.032	mg/L	0.010	04/02/20 18:08	
EPA 6020B	Boron	0.10	mg/L	0.10	04/02/20 18:08	
EPA 6020B	Chromium	0.0013J	mg/L	0.010	04/02/20 18:08	
EPA 6020B	Lead	0.00012J	mg/L	0.0050	04/02/20 18:08	
EPA 6020B	Molybdenum	0.0091J	mg/L	0.010	04/02/20 18:08	
SM 2540C	Total Dissolved Solids	278	mg/L	10.0	03/26/20 15:30	
EPA 300.0 Rev 2.1 1993	Chloride	4.5	mg/L	1.0	04/03/20 01:28	
EPA 300.0 Rev 2.1 1993	Fluoride	0.085J	mg/L	0.30	04/03/20 01:28	
EPA 300.0 Rev 2.1 1993	Sulfate	25.9	mg/L	1.0	04/03/20 01:28	
2630417002	HGWC-124					
	Field pH	7.18	Std. Units		03/30/20 10:05	
EPA 6010D	Calcium	104	mg/L	1.0	03/31/20 19:34	
EPA 6020B	Barium	0.075	mg/L	0.010	04/02/20 18:35	
EPA 6020B	Boron	0.44	mg/L	0.10	04/02/20 18:35	
EPA 6020B	Chromium	0.00051J	mg/L	0.010	04/02/20 18:35	
EPA 6020B	Lead	0.000094J	mg/L	0.0050	04/02/20 18:35	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	04/02/20 18:35	
EPA 6020B	Molybdenum	0.0010J	mg/L	0.010	04/02/20 18:35	
SM 2540C	Total Dissolved Solids	355	mg/L	10.0	03/26/20 15:30	
EPA 300.0 Rev 2.1 1993	Chloride	2.7	mg/L	1.0	04/03/20 02:11	
EPA 300.0 Rev 2.1 1993	Sulfate	74.6	mg/L	1.0	04/03/20 02:11	
2630417003	HGWC-120					
	Field pH	6.80	Std. Units		03/30/20 10:05	
EPA 6010D	Calcium	170	mg/L	1.0	04/02/20 14:15	
EPA 6020B	Barium	0.052	mg/L	0.010	04/03/20 14:40	
EPA 6020B	Boron	1.1	mg/L	0.10	04/03/20 14:40	
EPA 6020B	Chromium	0.0015J	mg/L	0.010	04/03/20 14:40	
EPA 6020B	Cobalt	0.0036J	mg/L	0.0050	04/03/20 14:40	
EPA 6020B	Lithium	0.024J	mg/L	0.030	04/03/20 14:40	
EPA 6020B	Molybdenum	0.034	mg/L	0.010	04/03/20 14:40	
SM 2540C	Total Dissolved Solids	665	mg/L	10.0	04/01/20 14:45	
EPA 300.0 Rev 2.1 1993	Chloride	2.4	mg/L	1.0	04/03/20 04:52	
EPA 300.0 Rev 2.1 1993	Fluoride	0.43	mg/L	0.30	04/03/20 04:52	
EPA 300.0 Rev 2.1 1993	Sulfate	226	mg/L	5.0	04/03/20 11:46	
2630417004	FD-03					
EPA 6020B	Barium	0.053	mg/L	0.010	04/03/20 15:03	
EPA 6020B	Boron	1.2	mg/L	0.10	04/03/20 15:03	
EPA 6020B	Cobalt	0.0038J	mg/L	0.0050	04/03/20 15:03	
EPA 6020B	Lithium	0.025J	mg/L	0.030	04/03/20 15:03	
EPA 6020B	Molybdenum	0.034	mg/L	0.010	04/03/20 15:03	
SM 2540C	Total Dissolved Solids	12.0	mg/L	10.0	04/01/20 14:45	
2630417005	HGWC-121A					
	Field pH	6.91	Std. Units		03/30/20 10:05	

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630417005	HGWC-121A					
EPA 6010D	Calcium	139	mg/L	1.0	04/02/20 14:43	
EPA 6020B	Barium	0.099	mg/L	0.010	04/03/20 14:52	
EPA 6020B	Boron	1.6	mg/L	0.10	04/03/20 14:52	
EPA 6020B	Chromium	0.00050J	mg/L	0.010	04/03/20 14:52	
EPA 6020B	Lithium	0.0066J	mg/L	0.030	04/03/20 14:52	
SM 2540C	Total Dissolved Solids	521	mg/L	10.0	04/01/20 14:46	
EPA 300.0 Rev 2.1 1993	Chloride	16.3	mg/L	1.0	04/03/20 05:21	
EPA 300.0 Rev 2.1 1993	Fluoride	0.095J	mg/L	0.30	04/03/20 05:21	
EPA 300.0 Rev 2.1 1993	Sulfate	116	mg/L	2.0	04/03/20 12:02	
2630417006	MW-32					
	Field pH	6.86	Std. Units		03/30/20 10:05	
EPA 6010D	Calcium	170	mg/L	1.0	04/02/20 14:46	
EPA 6020B	Barium	0.062	mg/L	0.010	04/03/20 14:57	
EPA 6020B	Boron	1.2	mg/L	0.10	04/03/20 14:57	
EPA 6020B	Cobalt	0.0031J	mg/L	0.0050	04/03/20 14:57	
EPA 6020B	Lithium	0.034	mg/L	0.030	04/03/20 14:57	
EPA 6020B	Molybdenum	0.062	mg/L	0.010	04/03/20 14:57	
SM 2540C	Total Dissolved Solids	641	mg/L	10.0	04/01/20 14:47	
EPA 300.0 Rev 2.1 1993	Chloride	2.2	mg/L	1.0	04/03/20 05:36	
EPA 300.0 Rev 2.1 1993	Fluoride	0.34	mg/L	0.30	04/03/20 05:36	
EPA 300.0 Rev 2.1 1993	Sulfate	204	mg/L	4.0	04/03/20 12:18	
2630417007	FB-03					
EPA 6010D	Calcium	171	mg/L	1.0	04/02/20 14:50	
EPA 6020B	Boron	0.0082J	mg/L	0.10	04/03/20 14:46	
SM 2540C	Total Dissolved Solids	675	mg/L	10.0	04/01/20 14:48	
EPA 300.0 Rev 2.1 1993	Chloride	2.4	mg/L	1.0	04/03/20 05:50	
EPA 300.0 Rev 2.1 1993	Fluoride	0.43	mg/L	0.30	04/03/20 05:50	
EPA 300.0 Rev 2.1 1993	Sulfate	232	mg/L	5.0	04/03/20 13:16	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Sample: HGWA-122		Lab ID: 2630417001		Collected: 03/24/20 11:50		Received: 03/25/20 09:41		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.08	Std. Units			1		03/30/20 10:05		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	81.2	mg/L	1.0	0.14	1	03/30/20 21:21	03/31/20 19:14	7440-70-2	M1
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Barium	0.032	mg/L	0.010	0.00049	1	03/30/20 21:06	04/02/20 18:08	7440-39-3	
Boron	0.10	mg/L	0.10	0.0049	1	03/30/20 21:06	04/02/20 18:08	7440-42-8	
Chromium	0.0013J	mg/L	0.010	0.00039	1	03/30/20 21:06	04/02/20 18:08	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/30/20 21:06	04/02/20 18:08	7440-48-4	
Lead	0.00012J	mg/L	0.0050	0.000046	1	03/30/20 21:06	04/02/20 18:08	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/30/20 21:06	04/02/20 18:08	7439-93-2	
Molybdenum	0.0091J	mg/L	0.010	0.00095	1	03/30/20 21:06	04/02/20 18:08	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	278	mg/L	10.0	10.0	1		03/26/20 15:30		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	4.5	mg/L	1.0	0.60	1		04/03/20 01:28	16887-00-6	
Fluoride	0.085J	mg/L	0.30	0.050	1		04/03/20 01:28	16984-48-8	
Sulfate	25.9	mg/L	1.0	0.50	1		04/03/20 01:28	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Sample: HGWC-124		Lab ID: 2630417002		Collected: 03/24/20 16:20		Received: 03/25/20 09:41		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.18	Std. Units			1		03/30/20 10:05		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	104	mg/L	1.0	0.14	1	03/30/20 21:21	03/31/20 19:34	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Barium	0.075	mg/L	0.010	0.00049	1	03/30/20 21:06	04/02/20 18:35	7440-39-3	
Boron	0.44	mg/L	0.10	0.0049	1	03/30/20 21:06	04/02/20 18:35	7440-42-8	
Chromium	0.00051J	mg/L	0.010	0.00039	1	03/30/20 21:06	04/02/20 18:35	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/30/20 21:06	04/02/20 18:35	7440-48-4	
Lead	0.000094J	mg/L	0.0050	0.000046	1	03/30/20 21:06	04/02/20 18:35	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	03/30/20 21:06	04/02/20 18:35	7439-93-2	
Molybdenum	0.0010J	mg/L	0.010	0.00095	1	03/30/20 21:06	04/02/20 18:35	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	355	mg/L	10.0	10.0	1		03/26/20 15:30		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2.7	mg/L	1.0	0.60	1		04/03/20 02:11	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 02:11	16984-48-8	
Sulfate	74.6	mg/L	1.0	0.50	1		04/03/20 02:11	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Sample: HGWC-120		Lab ID: 2630417003		Collected: 03/25/20 09:40		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.80	Std. Units			1		03/30/20 10:05		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	170	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:15	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Barium	0.052	mg/L	0.010	0.00049	1	03/31/20 21:07	04/03/20 14:40	7440-39-3	
Boron	1.1	mg/L	0.10	0.0049	1	03/31/20 21:07	04/03/20 14:40	7440-42-8	
Chromium	0.0015J	mg/L	0.010	0.00039	1	03/31/20 21:07	04/03/20 14:40	7440-47-3	
Cobalt	0.0036J	mg/L	0.0050	0.00030	1	03/31/20 21:07	04/03/20 14:40	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:07	04/03/20 14:40	7439-92-1	
Lithium	0.024J	mg/L	0.030	0.00078	1	03/31/20 21:07	04/03/20 14:40	7439-93-2	
Molybdenum	0.034	mg/L	0.010	0.00095	1	03/31/20 21:07	04/03/20 14:40	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	665	mg/L	10.0	10.0	1		04/01/20 14:45		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2.4	mg/L	1.0	0.60	1		04/03/20 04:52	16887-00-6	
Fluoride	0.43	mg/L	0.30	0.050	1		04/03/20 04:52	16984-48-8	
Sulfate	226	mg/L	5.0	2.5	5		04/03/20 11:46	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Sample: FD-03		Lab ID: 2630417004		Collected: 03/25/20 09:40		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA							
Calcium	ND	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:39	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA							
Barium	0.053	mg/L	0.010	0.00049	1	03/31/20 21:07	04/03/20 15:03	7440-39-3	
Boron	1.2	mg/L	0.10	0.0049	1	03/31/20 21:07	04/03/20 15:03	7440-42-8	
Chromium	ND	mg/L	0.010	0.00039	1	03/31/20 21:07	04/03/20 15:03	7440-47-3	
Cobalt	0.0038J	mg/L	0.0050	0.00030	1	03/31/20 21:07	04/03/20 15:03	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:07	04/03/20 15:03	7439-92-1	
Lithium	0.025J	mg/L	0.030	0.00078	1	03/31/20 21:07	04/03/20 15:03	7439-93-2	
Molybdenum	0.034	mg/L	0.010	0.00095	1	03/31/20 21:07	04/03/20 15:03	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA							
Total Dissolved Solids	12.0	mg/L	10.0	10.0	1		04/01/20 14:45		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	ND	mg/L	1.0	0.60	1		04/03/20 05:07	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 05:07	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		04/03/20 05:07	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Sample: HGWC-121A		Lab ID: 2630417005		Collected: 03/25/20 10:51		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.91	Std. Units			1		03/30/20 10:05		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	139	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:43	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Barium	0.099	mg/L	0.010	0.00049	1	03/31/20 21:07	04/03/20 14:52	7440-39-3	
Boron	1.6	mg/L	0.10	0.0049	1	03/31/20 21:07	04/03/20 14:52	7440-42-8	
Chromium	0.00050J	mg/L	0.010	0.00039	1	03/31/20 21:07	04/03/20 14:52	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/31/20 21:07	04/03/20 14:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:07	04/03/20 14:52	7439-92-1	
Lithium	0.0066J	mg/L	0.030	0.00078	1	03/31/20 21:07	04/03/20 14:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:07	04/03/20 14:52	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	521	mg/L	10.0	10.0	1		04/01/20 14:46		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	16.3	mg/L	1.0	0.60	1		04/03/20 05:21	16887-00-6	
Fluoride	0.095J	mg/L	0.30	0.050	1		04/03/20 05:21	16984-48-8	
Sulfate	116	mg/L	2.0	1.0	2		04/03/20 12:02	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Sample: MW-32		Lab ID: 2630417006		Collected: 03/25/20 14:06		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.86	Std. Units			1		03/30/20 10:05		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	170	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:46	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Barium	0.062	mg/L	0.010	0.00049	1	03/31/20 21:07	04/03/20 14:57	7440-39-3	
Boron	1.2	mg/L	0.10	0.0049	1	03/31/20 21:07	04/03/20 14:57	7440-42-8	
Chromium	ND	mg/L	0.010	0.00039	1	03/31/20 21:07	04/03/20 14:57	7440-47-3	
Cobalt	0.0031J	mg/L	0.0050	0.00030	1	03/31/20 21:07	04/03/20 14:57	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:07	04/03/20 14:57	7439-92-1	
Lithium	0.034	mg/L	0.030	0.00078	1	03/31/20 21:07	04/03/20 14:57	7439-93-2	
Molybdenum	0.062	mg/L	0.010	0.00095	1	03/31/20 21:07	04/03/20 14:57	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	641	mg/L	10.0	10.0	1		04/01/20 14:47		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2.2	mg/L	1.0	0.60	1		04/03/20 05:36	16887-00-6	
Fluoride	0.34	mg/L	0.30	0.050	1		04/03/20 05:36	16984-48-8	
Sulfate	204	mg/L	4.0	2.0	4		04/03/20 12:18	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

Sample: FB-03		Lab ID: 2630417007		Collected: 03/25/20 18:20		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA							
Calcium	171	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:50	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA							
Barium	ND	mg/L	0.010	0.00049	1	03/31/20 21:07	04/03/20 14:46	7440-39-3	
Boron	0.0082J	mg/L	0.10	0.0049	1	03/31/20 21:07	04/03/20 14:46	7440-42-8	
Chromium	ND	mg/L	0.010	0.00039	1	03/31/20 21:07	04/03/20 14:46	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/31/20 21:07	04/03/20 14:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:07	04/03/20 14:46	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/31/20 21:07	04/03/20 14:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:07	04/03/20 14:46	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA							
Total Dissolved Solids	675	mg/L	10.0	10.0	1		04/01/20 14:48		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	2.4	mg/L	1.0	0.60	1		04/03/20 05:50	16887-00-6	
Fluoride	0.43	mg/L	0.30	0.050	1		04/03/20 05:50	16984-48-8	
Sulfate	232	mg/L	5.0	2.5	5		04/03/20 13:16	14808-79-8	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 2ND SEMIANNUAL

Pace Project No.: 2630417

QC Batch: 45067	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630417001, 2630417002

METHOD BLANK: 207568 Matrix: Water

Associated Lab Samples: 2630417001, 2630417002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/03/20 16:58	

LABORATORY CONTROL SAMPLE: 207569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207570 207571

Parameter	Units	207570		207571		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	81.2	1	81.9	81.9	68	67	75-125	0	20	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

QC Batch: 45121 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

METHOD BLANK: 207982 Matrix: Water
Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/02/20 13:05	

LABORATORY CONTROL SAMPLE: 207983

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207984 207985

Parameter	Units	207984		207985		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	157	1	1	158	157	93	15	75-125	0	20 M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

QC Batch: 45065 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630417001, 2630417002

METHOD BLANK: 207560 Matrix: Water
Associated Lab Samples: 2630417001, 2630417002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	mg/L	ND	0.010	0.00049	04/02/20 17:16	
Boron	mg/L	ND	0.10	0.0049	04/02/20 17:16	
Chromium	mg/L	ND	0.010	0.00039	04/02/20 17:16	
Cobalt	mg/L	ND	0.0050	0.00030	04/02/20 17:16	
Lead	mg/L	ND	0.0050	0.000046	04/02/20 17:16	
Lithium	mg/L	ND	0.030	0.00078	04/02/20 17:16	
Molybdenum	mg/L	ND	0.010	0.00095	04/02/20 17:16	

LABORATORY CONTROL SAMPLE: 207561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.1	0.10	104	80-120	
Boron	mg/L	1	1.0	104	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.10	103	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207562 207563

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630414001 Result	Spike Conc.	Spike Conc.	Conc.								
Barium	mg/L	0.032	0.1	0.1	0.13	0.13	102	101	75-125	1	20		
Boron	mg/L	0.011J	1	1	1.0	1.0	101	103	75-125	2	20		
Chromium	mg/L	0.0019J	0.1	0.1	0.11	0.10	104	102	75-125	3	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20		
Lead	mg/L	0.00058J	0.1	0.1	0.10	0.097	99	97	75-125	2	20		
Lithium	mg/L	0.0039J	0.1	0.1	0.10	0.11	101	102	75-125	2	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	105	102	75-125	3	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

QC Batch: 45113 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

METHOD BLANK: 207961 Matrix: Water
Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	mg/L	ND	0.010	0.00049	04/03/20 13:05	
Boron	mg/L	ND	0.10	0.0049	04/03/20 13:05	
Chromium	mg/L	ND	0.010	0.00039	04/03/20 13:05	
Cobalt	mg/L	ND	0.0050	0.00030	04/03/20 13:05	
Lead	mg/L	ND	0.0050	0.000046	04/03/20 13:05	
Lithium	mg/L	ND	0.030	0.00078	04/03/20 13:05	
Molybdenum	mg/L	ND	0.010	0.00095	04/03/20 13:05	

LABORATORY CONTROL SAMPLE: 207962

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.1	105	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	103	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207963 207964

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630472004 Result	Spike Conc.	Spike Conc.	Result						
Barium	mg/L	0.19	0.1	0.1	0.28	92	97	75-125	2	20	
Boron	mg/L	0.021J	1	1	1.0	102	97	75-125	5	20	
Chromium	mg/L	ND	0.1	0.1	0.10	100	99	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20
Lead	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20
Lithium	mg/L	0.011J	0.1	0.1	0.11	0.10	97	94	75-125	4	20
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

QC Batch: 44951	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630417001, 2630417002

LABORATORY CONTROL SAMPLE: 206868

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	384	96	84-108	

SAMPLE DUPLICATE: 206869

Parameter	Units	2630417001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	278	277	0	10	

SAMPLE DUPLICATE: 206870

Parameter	Units	2630431001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L		60.0			

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 2ND SEMIANNUAL

Pace Project No.: 2630417

QC Batch:	45158	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

LABORATORY CONTROL SAMPLE: 208023

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	370	92	84-108	

SAMPLE DUPLICATE: 208024

Parameter	Units	2630414005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	21.0	ND		10	

SAMPLE DUPLICATE: 208025

Parameter	Units	2630417005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	521	525	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

QC Batch: 533753 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 2630417001, 2630417002

METHOD BLANK: 2848998 Matrix: Water
Associated Lab Samples: 2630417001, 2630417002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/03/20 01:00	
Fluoride	mg/L	ND	0.10	0.050	04/03/20 01:00	
Sulfate	mg/L	ND	1.0	0.50	04/03/20 01:00	

LABORATORY CONTROL SAMPLE: 2848999

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.0	102	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	50	50.6	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849000 2849001

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630417001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	4.5	50	50	57.8	57.7	107	106	90-110	0	10		
Fluoride	mg/L	0.085J	2.5	2.5	2.4	2.5	93	95	90-110	2	10		
Sulfate	mg/L	25.9	50	50	77.5	77.4	103	103	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851053 2851054

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630546001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	33.3	50	50	83.1	83.3	100	100	90-110	0	10		
Fluoride	mg/L	0.10	2.5	2.5	2.5	2.5	94	95	90-110	1	10		
Sulfate	mg/L	24.4	50	50	73.7	74.0	99	99	90-110	0	10		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 2ND SEMIANNUAL
Pace Project No.: 2630417

QC Batch: 533972 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

METHOD BLANK: 2849817 Matrix: Water
Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/02/20 23:19	
Fluoride	mg/L	ND	0.10	0.050	04/02/20 23:19	
Sulfate	mg/L	ND	1.0	0.50	04/02/20 23:19	

LABORATORY CONTROL SAMPLE: 2849818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	47.7	95	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	47.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849819 2849820

Parameter	Units	2630435024 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.4	50	50	56.3	57.7	102	105	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	106	108	90-110	2	10	
Sulfate	mg/L	ND	50	50	51.2	52.1	102	104	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849821 2849822

Parameter	Units	2630449009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.6	50	50	54.0	53.9	105	105	90-110	0	10	
Fluoride	mg/L	0.13J	2.5	2.5	2.8	2.8	107	107	90-110	0	10	
Sulfate	mg/L	39.1	50	50	89.7	89.4	101	101	90-110	0	10	

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QUALIFIERS

Project: HAMMOND AP-3 2ND SEMIANNUAL

Pace Project No.: 2630417

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

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: HAMMOND AP-3 2ND SEMIANNUAL

Pace Project No.: 2630417

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2630417001	HGWA-122				
2630417002	HGWC-124				
2630417003	HGWC-120				
2630417005	HGWC-121A				
2630417006	MW-32				
2630417001	HGWA-122	EPA 3010A	45067	EPA 6010D	45072
2630417002	HGWC-124	EPA 3010A	45067	EPA 6010D	45072
2630417003	HGWC-120	EPA 3010A	45121	EPA 6010D	45135
2630417004	FD-03	EPA 3010A	45121	EPA 6010D	45135
2630417005	HGWC-121A	EPA 3010A	45121	EPA 6010D	45135
2630417006	MW-32	EPA 3010A	45121	EPA 6010D	45135
2630417007	FB-03	EPA 3010A	45121	EPA 6010D	45135
2630417001	HGWA-122	EPA 3005A	45065	EPA 6020B	45069
2630417002	HGWC-124	EPA 3005A	45065	EPA 6020B	45069
2630417003	HGWC-120	EPA 3005A	45113	EPA 6020B	45136
2630417004	FD-03	EPA 3005A	45113	EPA 6020B	45136
2630417005	HGWC-121A	EPA 3005A	45113	EPA 6020B	45136
2630417006	MW-32	EPA 3005A	45113	EPA 6020B	45136
2630417007	FB-03	EPA 3005A	45113	EPA 6020B	45136
2630417001	HGWA-122	SM 2540C	44951		
2630417002	HGWC-124	SM 2540C	44951		
2630417003	HGWC-120	SM 2540C	45158		
2630417004	FD-03	SM 2540C	45158		
2630417005	HGWC-121A	SM 2540C	45158		
2630417006	MW-32	SM 2540C	45158		
2630417007	FB-03	SM 2540C	45158		
2630417001	HGWA-122	EPA 300.0 Rev 2.1 1993	533753		
2630417002	HGWC-124	EPA 300.0 Rev 2.1 1993	533753		
2630417003	HGWC-120	EPA 300.0 Rev 2.1 1993	533972		
2630417004	FD-03	EPA 300.0 Rev 2.1 1993	533972		
2630417005	HGWC-121A	EPA 300.0 Rev 2.1 1993	533972		
2630417006	MW-32	EPA 300.0 Rev 2.1 1993	533972		
2630417007	FB-03	EPA 300.0 Rev 2.1 1993	533972		

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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 Requested Client Information Company: GA Power Address: Atlanta, GA	Section B Requested Project Information Report To: SCS Contacts Copy To: Geosytec Contacts	Section C Invoice Information Attention: Southern Co. Company Name:
Email To: SCS Contacts Phone: Requested Date/Deliver To Day:	Purchase Order No.: Project Name: Plant Hammond AP-3 Project Number: GWS581	Address: City/State: Second Reference: Kevin Herring Plant Project Manager Plant Profile #: 29126
REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>		Requested Analysis Filtered (Y/N)
Site Location STATE: GA		Requested Analysis Filtered (Y/N)

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER WASTE WATER WASTEWATER PRODUCT SOLUBLE OIL WATER MILK OTHER TISSUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test			Residual Chlorine (Y/N)				
										Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Y	N		Y	N	Y	N
1																								
2	HW-122 HW-C-124			3/27/20	11:30				5	2														
3									5	2														
4									5	2														
5									5	2														
6									5	2														
7									5	2														
8									5	2														
9									5	2														
10									5	2														
11									5	2														
12									5	2														

Additional Comments: *Metals-8a, B, Ca, Cr, Co, Pb, Li, Mo*

REQUISITIONED BY / AFFILIATION: *Blaney* DATE: *3/24/20* TIME: *11:30*

ACCEPTED BY / AFFILIATION: *Kevin Herring* DATE: *3/24/20* TIME: *11:30*

SAMPLER NAME AND SIGNATURE: *Nelson Gurdy*

PRINT NAME OF SAMPLER: *Nelson Gurdy*

SIGNATURE OF SAMPLER: *Nelson Gurdy*

DATE SIGNED (MM/DD/YY): *3/24/20*

Temp in °C

Received on Ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)



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: GA Power Address: Atlanta, GA		Section B Required Project Information: Report To: SCS Contacts Copy to: Geosynlec Contacts		Section C Invoice Information: Attention: Southern Co. Company Name:	
Email To: SCS Contacts Phone:		Purchase Order No.:		Address:	
Requested Date/Date/T: to Day		Project Name: Plant Hammond AP-3 Semiannual Compliance		Site Location: GA	
		Project Number: GW6581		Regulatory Agency:	
		Paper Grade:		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	
		Reference: Kevin Herring		<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	
		Manager:		Pace Profile #: 2912-6	

ITEM #	Section D Required Client Information	Valid Matrix Codes Matrix Code	Matrix Code (see valid codes to left)	Sample Type (G=GRAB C=COMP)	Date	Time	Date	Time	Sample Temp at Collection	# of Containers	Preservatives							Analysis Test			Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH =								
											Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₈	Methanol	Other	Chloride, Fluoride, Sulfate	TDS				Metals 6010/6020*	RAD 226/228						
1	HAULT-120		WT G	G	3/25/20	940				5	2									X											
2	FO-03		WT G	G	3/25/20	940				5	2									X											
3			WT G	G						5	2									X											
4			WT G	G						5	2									X											
5			WT G	G						5	2									X											
6			WT G	G						5	2									X											
7			WT G	G						5	2									X											
8			WT G	G						5	2									X											
9			WT G	G						5	2									X											
10			WT G	G						5	2									X											
11			WT G	G						5	2									X											
12			WT G	G						5	2									X											

Section D
Additional Comments:

RELINQUISHED BY / AFFILIATION

DATE: 3/25/20
TIME: 1812

ACCEPTED BY / AFFILIATION

DATE: 3/25/20
TIME: 1812

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nelson Tucker

SIGNATURE of SAMPLER: *[Signature]*

DATE Signed (MM/DD/YYYY): 03/25/20

Temp in °C

Received on Ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020REV.07, 15-Feb-2007

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: GA Power Address: Atlanta, GA	Section B Required Project Information Report To: SCS Contacts Copy To: Geosyntec Contacts	Section C Invoice Information Attention: Southern Co. Company Name	REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>
Email To: SCS Contacts Phone: _____ Fax: _____ Requested Due Date/TAT: 10 Day	Purchase Order No.: _____ Project Name: Plant Hammond AP-3 Semiannual Compliance Sampling Project Number: GW6581	Address: _____ Pace Quote Reference: Kevin Hemming Manager: Pace Profile #: 2912-5	State Location: _____ STATE: GA

ITEM #	Section D Required Client Information	Valid Matrix Codes MATERIALS CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.					
					DATE	TIME			DATE	TIME	H ₂ SO ₄	HNO ₃	HCl	NaOH			Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate	TDS
1	HW-1211A	DW WATER	DW	G	3/25/20	10:51	18.5	5	2	3											
2	NV-32	WW WASTE WATER	WW	G	3/25/20	14:06	17.5	5	2	3											
3	FD-03	PROD SOIL/SOLID	SL	G	3/25/20	18:20															
4		WPE WIPES	WP	G																	
5		AIR OTHER	AR	G																	
6		OT TISSUE	OT	G																	
7				G																	
8				G																	
9				G																	
10				G																	
11				G																	
12				G																	

ADDITIONAL COMMENTS:
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.

RELINQUISHED BY / AFFILIATION:
Madelia Mumphrey / Geosyntec
Date: 3-25-20
Time: 11:10

ACCEPTED BY / AFFILIATION:
Madelia Mumphrey / Geosyntec
Date: 3/26/20
Time: 2:02

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

SAMPLER NAME AND SIGNATURE:
PRINT Name of SAMPLER: Aaron Reetz
SIGNATURE of SAMPLER: [Signature]DATE Signed (MM/DD/YY): 03-25-2020

TEMPERATURE AND CONDITION:
Temp in °C: _____
Received on Ice (Y/N): _____
Custody Sealed Cooler (Y/N): _____
Samples Intact (Y/N): _____

April 17, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2630417
Pace Project No.: 30356483

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 26, 2020 and March 27, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,



Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 2630417
Pace Project No.: 30356483

Pace Analytical Services Pennsylvania

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 2630417
Pace Project No.: 30356483

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2630417001	HGWA-122	Water	03/24/20 11:50	03/26/20 09:15
2630417002	HGWC-124	Water	03/24/20 16:20	03/26/20 09:15
2630417003	HGWC-120	Water	03/25/20 09:40	03/27/20 10:35
2630417004	FD-03	Water	03/25/20 09:40	03/27/20 10:35
2630417005	HGWC-121A	Water	03/25/20 10:51	03/27/20 10:35
2630417006	MW-32	Water	03/25/20 14:06	03/27/20 10:35
2630417007	FB-03	Water	03/25/20 18:20	03/27/20 10:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2630417
Pace Project No.: 30356483

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630417001	HGWA-122	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630417002	HGWC-124	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630417003	HGWC-120	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630417004	FD-03	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630417005	HGWC-121A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630417006	MW-32	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630417007	FB-03	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630417
Pace Project No.: 30356483

Sample: HGWA-122		Lab ID: 2630417001	Collected: 03/24/20 11:50	Received: 03/26/20 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.379 ± 0.252 (0.384) C:94% T:NA	pCi/L	04/06/20 09:52	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.214 ± 0.307 (0.764) C:80% T:91%	pCi/L	04/15/20 14:43	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.379 ± 0.559 (1.15)	pCi/L	04/16/20 14:02	7440-14-4	

Sample: HGWC-124		Lab ID: 2630417002	Collected: 03/24/20 16:20	Received: 03/26/20 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.346 ± 0.254 (0.418) C:91% T:NA	pCi/L	04/06/20 09:52	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.450 ± 0.352 (0.699) C:79% T:95%	pCi/L	04/15/20 14:44	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.796 ± 0.606 (1.12)	pCi/L	04/16/20 14:02	7440-14-4	

Sample: HGWC-120		Lab ID: 2630417003	Collected: 03/25/20 09:40	Received: 03/27/20 10:35	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.696 ± 0.172 (0.125) C:93% T:NA	pCi/L	04/07/20 18:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.181 ± 0.401 (0.950) C:82% T:89%	pCi/L	04/16/20 14:15	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.696 ± 0.573 (1.08)	pCi/L	04/17/20 10:30	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630417
Pace Project No.: 30356483

Sample: FD-03		Lab ID: 2630417004	Collected: 03/25/20 09:40	Received: 03/27/20 10:35	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.376 ± 0.119 (0.116) C:95% T:NA	pCi/L	04/07/20 19:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.236 ± 0.380 (0.824) C:85% T:80%	pCi/L	04/16/20 14:15	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.612 ± 0.499 (0.940)	pCi/L	04/17/20 10:30	7440-14-4	

Sample: HGWC-121A		Lab ID: 2630417005	Collected: 03/25/20 10:51	Received: 03/27/20 10:35	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.505 ± 0.171 (0.227) C:91% T:NA	pCi/L	04/07/20 19:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.302 ± 0.280 (0.716) C:83% T:89%	pCi/L	04/16/20 14:15	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.505 ± 0.451 (0.943)	pCi/L	04/17/20 10:30	7440-14-4	

Sample: MW-32		Lab ID: 2630417006	Collected: 03/25/20 14:06	Received: 03/27/20 10:35	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.714 ± 0.174 (0.110) C:91% T:NA	pCi/L	04/07/20 19:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.796 ± 0.388 (0.668) C:82% T:93%	pCi/L	04/16/20 14:15	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.51 ± 0.562 (0.778)	pCi/L	04/17/20 10:30	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630417
Pace Project No.: 30356483

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.533 ± 0.166 (0.196) C:90% T:NA	pCi/L	04/07/20 19:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.991 ± 0.450 (0.752) C:81% T:82%	pCi/L	04/16/20 14:15	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.52 ± 0.616 (0.948)	pCi/L	04/17/20 10:30	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630417
Pace Project No.: 30356483

QC Batch: 390462	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630417001, 2630417002

METHOD BLANK: 1890903 Matrix: Water

Associated Lab Samples: 2630417001, 2630417002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.720 ± 0.398 (0.719) C:76% T:93%	pCi/L	04/15/20 14:44	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630417
Pace Project No.: 30356483

QC Batch:	390592	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

METHOD BLANK: 1891464 Matrix: Water

Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.444 ± 0.130 (0.104) C:98% T:NA	pCi/L	04/07/20 18:26	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630417
Pace Project No.: 30356483

QC Batch: 390595	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

METHOD BLANK: 1891467 Matrix: Water

Associated Lab Samples: 2630417003, 2630417004, 2630417005, 2630417006, 2630417007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.544 ± 0.340 (0.632) C:84% T:88%	pCi/L	04/16/20 14:15	

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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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630417
Pace Project No.: 30356483

QC Batch: 390461	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630417001, 2630417002

METHOD BLANK: 1890902 Matrix: Water

Associated Lab Samples: 2630417001, 2630417002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.480 ± 0.276 (0.342) C:87% T:NA	pCi/L	04/06/20 09:52	

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: 2630417
Pace Project No.: 30356483

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA

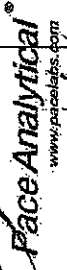
Cert. Needed: Yes No

Workorder: 2630417

Workorder Name: AP-3 2ND SEMIANNUAL COMPLIANCE

Owner Received Date: 3/25/2020

Results Requested By: 4/8/2020

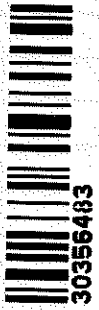


21 days

Kevin Herring
Pace Analytical Charlotte
9800 Kinsey Ave.
Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2,3, & 4
Greensburg, PA 15601
Phone (724)860-5600

WO#: 30356483



30356483

Item	Sample ID	Sample Type	Collection Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY
						HNO3		
1	HGWA-122	PS	3/24/2020 11:50	2630417001	Water	✓	✓	
2	HGWA-124	PS	3/24/2020 16:20	2630417002	Water	✓	✓	
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1			<i>[Signature]</i>	3-25-20 4:15		N	Y	N
2								
3								

Cooler Temperature on Receipt: NA °C

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State of Origin: GA
 Cert. Needed: Yes No

Workorder: 2630417 Workorder Name: AP-3 2ND SEMI ANNUAL COMPLIANCE Owner Received Date: 3/25/2020 Results Requested By: 4/8/2020

Kevin Herring
 Pace Analytical Charlotte
 9800 Kinney Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-5600



WO#: 30356483

PM: JAC Due Date: 04/16/20
 CLIENT: PACE_25_ATGA

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1				3/22/20 16:15				
2								
3								

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1		3/24/2020 11:50			X			
2		3/24/2020 16:20			X			
3		3/25/2020 09:40			X			
4		3/25/2020 09:40			X			
5		3/25/2020 10:51			X			
6		3/25/2020 14:06			X			
7		3/25/2020 18:20			X			

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1								
2								
3								

Add on project

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace GA

Project # 30356483

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1657 9507 1399

Label	<u>DL</u>
LIMS Login	<u>DL</u>

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents: <u>DL 3-26-20</u>
	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12.
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>pH 2</u>
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>DL</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17.
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>DL</u> Date: <u>3-26-20</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

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)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO#: 30356483

Pittsburgh Lab Sample Condition Upon Receipt

PM: JAC Due Date: 04/16/20

CLIENT: PACE_26_ATGA



Client Name: Pace GA

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1657 9507 1790

Label	<u>DL</u>
LIMS Login	<u>DL</u>

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:
				<u>1002191</u>	<u>DL 3-30-21</u>
Chain of Custody Present:	/				
Chain of Custody Filled Out:	/				
Chain of Custody Relinquished:	/				
Sampler Name & Signature on COC:	/				
Sample Labels match COC:	/				
-Includes date/time/ID Matrix: <u>W</u>					
Samples Arrived within Hold Time:	/				
Short Hold Time Analysis (<72hr remaining):		/			
Rush Turn Around Time Requested:		/			
Sufficient Volume:	/				
Correct Containers Used:	/				
-Pace Containers Used:	/				
Containers Intact:	/				
Orthophosphate field filtered		/			
Hex Cr Aqueous sample field filtered		/			
Organic Samples checked for dechlorination:		/			
Filtered volume received for Dissolved tests		/			
All containers have been checked for preservation.	/				
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>PT12</u>	
All containers meet method preservation requirements.	/			Initial when completed <u>DL</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):		/			
Trip Blank Present:		/			
Trip Blank Custody Seals Present		/			
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed <u>DL</u>	Date: <u>3-30-21</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

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)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
 Analyst: LAL
 Date: 4/5/2020
 Worklist: 53204
 Matrix: DW

Method Blank Assessment	
MB Sample ID	1890902
MB concentration:	0.480
M/B Counting Uncertainty:	0.268
MB MDC:	0.342
MB Numerical Performance Indicator:	3.52
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSD53204	LCSD53204
Count Date:	4/5/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.502
Target Conc. (pCi/L, g, F):	4.789
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	5.112
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.790
Numerical Performance Indicator:	0.80
Percent Recovery:	106.73%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2630417001
Duplicate Sample I.D.:	2630417001DUP
Sample Result (pCi/L, g, F):	0.379
Sample Result Counting Uncertainty (pCi/L, g, F):	0.246
Sample Duplicate Result (pCi/L, g, F):	0.250
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.196
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	0.804
Duplicate RPD:	41.04%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:
 *The method blank result is below the reporting limit for this analysis and is acceptable.

***Each must be re-prepared due to unacceptable precision. N/A

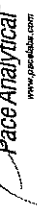
LAN 4/7/20

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

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

LAN 4/7/20

Quality Control Sample Performance Assessment



Test: Ra-226
Analyst: LAL
Date: 4/7/2020
Worklist: 53223
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1891464
MB concentration:	0.444
M/B Counting Uncertainty:	0.113
MB MDC:	0.104
MB Numerical Performance Indicator:	7.66
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCS/D (Y or N)?	Y
LCS53223	4/7/2020
Count Date:	4/7/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.509
Target Conc. (pCi/L, g, F):	4.761
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.967
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.343
Numerical Performance Indicator:	1.16
Percent Recovery:	104.32%
Status vs Numerical Indicator:	N/A
Upper % Recovery Limits:	Pass
Lower % Recovery Limits:	125%
	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS53223
Duplicate Sample I.D.:	LCS53223
Sample Result (pCi/L, g, F):	4.967
Sample Duplicate Result (pCi/L, g, F):	0.343
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.483
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.323
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	2.012
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	9.51%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:
*The method blank result is below the reporting limit for this analysis and is acceptable.

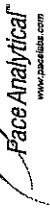
Sample Matrix Spike Control Assessment	
Sample Collection Date:	MS/MSD 1
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MSD Aliquot (L, g, F):	
MS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

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

WAMY 18/20

Cue 4/8/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/7/2020
Worklist: 53223
Matrix: DW

Method Blank Assessment	
MB Sample ID	1891464
MB concentration:	0.444
M/B Counting Uncertainty:	0.113
MB MDC:	0.104
MB Numerical Performance Indicator:	7.66
MB Status vs Numerical Indicator:	N/A
MB Status vs MDC:	See Comment*

Laboratory Control Sample Assessment	
LCSID (Y or N)?	N
LCS53223	LCS53223
Count Date:	4/7/2020
Spike ID:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.505
Target Conc. (pCi/L, g, F):	4.761
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.967
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.343
Numerical Performance Indicator:	1.16
Percent Recovery:	104.32%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2630417003
Duplicate Sample I.D.:	2630417003DUP
Sample Result (pCi/L, g, F):	0.696
Sample Duplicate Result (pCi/L, g, F):	0.140
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.776
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.142
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	-0.786
Duplicate RPD:	10.88%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:
*The method blank result is below the reporting limit for this analysis and is acceptable.

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

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

AM 4/8/20

Cue 4/8/20

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-228
Analyst: VAL
Date: 4/3/2020
Worklist: 53205
Matrix: WT

Method Blank Assessment	
MB Sample ID	1890903
MB concentration:	0.720
MB 2 Sigma CSU:	0.398
MB MDC:	0.719
MB Numerical Performance Indicator:	3.54
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD53205	LCSD53205
Count Date:	4/15/2020	4/15/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.481	34.481
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.801	0.810
Target Conc. (pCi/L, g, F):	4.303	4.258
Uncertainty (Calculated):	0.310	0.307
Result (pCi/L, g, F):	3.571	3.944
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.873	0.923
Numerical Performance Indicator:	-1.55	-0.63
Percent Recovery:	83.00%	92.64%
Status vs Numerical Indicator:	N/A	N/A
Upper % Recovery Limits:	Pass	Pass
Lower % Recovery Limits:	135%	135%
	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCSD53205
Duplicate Sample I.D.:	LCSD53205
Sample Result (pCi/L, g, F):	3.571
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.873
Sample Duplicate Result (pCi/L, g, F):	3.944
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.923
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.575
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	10.98%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

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

Comments:
*The method blank result is below the reporting limit for this analysis and is acceptable.

Handwritten signature

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/7/2020
Worklist: 53226
Matrix: WT



Method Blank Assessment	
MB Sample ID	1891467
MB concentration:	0.544
MB 2 Sigma CSU:	0.340
MB MDC:	0.632
MB Numerical Performance Indicator:	3.14
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	Y
Count Date:		LCSD53226	
Spike I.D.:		4/16/2020	
Decay Corrected Spike Concentration (pCi/mL):		19-057	19-057
Volume Used (mL):		34.469	34.469
Aliquot Volume (L, g, F):		0.10	0.10
Target Conc. (pCi/L, g, F):		0.806	0.804
Uncertainty (Calculated):		4.276	4.269
Result (pCi/L, g, F):		0.309	0.309
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):		2.644	3.287
Numerical Performance Indicator:		0.706	0.811
Percent Recovery:		-4.15	-2.26
Status vs Numerical Indicator:		61.83%	76.63%
Upper % Recovery Limits:		N/A	N/A
Lower % Recovery Limits:		Pass	Pass
		135%	135%
		60%	60%

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.	
Sample I.D.:	LCSD53226		
Duplicate Sample I.D.:	LCSD53226		
Sample Result (pCi/L, g, F):	2.644		
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.706		
Sample Duplicate Result (pCi/L, g, F):	3.287		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.811		
Are sample and/or duplicate results below RL?	NO		
Duplicate Numerical Performance Indicator:	-1.171		
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	21.37%		
Duplicate Status vs Numerical Indicator:	Pass		
Duplicate Status vs RPD:	Pass		
% RPD Limit:	36%		

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

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

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

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

Handwritten signature and date: 4-17-20

March 30, 2020

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

RE: Project: PLANT HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92471272

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 28, 2020. 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,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92471272

Pace Analytical Services Charlotte

9800 Kincey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92471272

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92471272001	MW-39	Water	03/27/20 14:32	03/28/20 10:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92471272

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92471272001	MW-39	EPA 6010D	SH1	1
		EPA 6020B	BG2	3
		SM 2540C-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92471272

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92471272001	MW-39					
	pH	6.82	Std. Units		03/30/20 08:21	
EPA 6010D	Calcium	120	mg/L	0.50	03/29/20 12:56	M1
EPA 6020B	Boron	0.70	mg/L	0.10	03/28/20 15:57	D3,M6
EPA 6020B	Molybdenum	0.012	mg/L	0.010	03/28/20 15:57	D3
SM 2540C-2011	Total Dissolved Solids	482	mg/L	25.0	03/28/20 12:16	
EPA 300.0 Rev 2.1 1993	Chloride	1.8	mg/L	1.0	03/28/20 12:14	
EPA 300.0 Rev 2.1 1993	Fluoride	0.29	mg/L	0.10	03/28/20 12:14	
EPA 300.0 Rev 2.1 1993	Sulfate	111	mg/L	3.0	03/28/20 12:59	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92471272

Sample: MW-39 Lab ID: 92471272001 Collected: 03/27/20 14:32 Received: 03/28/20 10:40 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
pH	6.82	Std. Units			1		03/30/20 08:21		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Calcium	120	mg/L	0.50	0.12	5	03/28/20 11:15	03/29/20 12:56	7440-70-2	M1
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Boron	0.70	mg/L	0.10	0.051	20	03/28/20 11:15	03/28/20 15:57	7440-42-8	D3,M6
Lithium	ND	mg/L	0.030	0.0084	20	03/28/20 11:15	03/28/20 15:57	7439-93-2	D3
Molybdenum	0.012	mg/L	0.010	0.0020	20	03/28/20 11:15	03/28/20 15:57	7439-98-7	D3
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Total Dissolved Solids	482	mg/L	25.0	25.0	1		03/28/20 12:16		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Chloride	1.8	mg/L	1.0	0.60	1		03/28/20 12:14	16887-00-6	
Fluoride	0.29	mg/L	0.10	0.050	1		03/28/20 12:14	16984-48-8	
Sulfate	111	mg/L	3.0	1.5	3		03/28/20 12:59	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92471272

QC Batch: 533116 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010 MET
Associated Lab Samples: 92471272001

METHOD BLANK: 2845933 Matrix: Water
Associated Lab Samples: 92471272001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.024	03/28/20 17:43	

LABORATORY CONTROL SAMPLE: 2845934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2845935 2845936

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92471272001 Result	Spike Conc.	Spike Conc.	Conc.								
Calcium	mg/L	120	5	5	5	128	129	164	182	75-125	1	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92471272

QC Batch: 533117	Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A	Analysis Description: 6020 MET
Associated Lab Samples: 92471272001	

METHOD BLANK: 2845937 Matrix: Water
Associated Lab Samples: 92471272001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.0026	03/28/20 15:42	
Lithium	mg/L	ND	0.030	0.00042	03/28/20 15:42	
Molybdenum	mg/L	ND	0.010	0.00010	03/28/20 15:42	

LABORATORY CONTROL SAMPLE: 2845938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	0.05	.05J	100	80-120	
Lithium	mg/L	0.05	0.051	102	80-120	
Molybdenum	mg/L	0.05	0.052	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2845939 2845940

Parameter	Units	92471272001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Boron	mg/L	0.70	0.05	0.05	0.76	0.77	113	130	75-125	1	20	M6	
Lithium	mg/L	ND	0.05	0.05	0.057	0.060	94	99	75-125	5	20		
Molybdenum	mg/L	0.012	0.05	0.05	0.061	0.062	98	100	75-125	2	20		

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92471272

QC Batch: 533120	Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92471272001	

METHOD BLANK: 2845947 Matrix: Water
Associated Lab Samples: 92471272001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	03/28/20 12:16	

Parameter	Units	LABORATORY CONTROL SAMPLE & LCSD: 2845948 2845949								
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	250	258	252	103	101	90-110	2	25	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92471272

QC Batch: 533105 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 92471272001

METHOD BLANK: 2845904 Matrix: Water
 Associated Lab Samples: 92471272001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/28/20 11:45	
Fluoride	mg/L	ND	0.10	0.050	03/28/20 11:45	
Sulfate	mg/L	ND	1.0	0.50	03/28/20 11:45	

LABORATORY CONTROL SAMPLE: 2845905

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.9	98	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	50	48.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2845906 2845907

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		92471272001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	1.8	50	50	50.4	50.6	97	98	90-110	0	10		
Fluoride	mg/L	0.29	2.5	2.5	2.9	2.9	103	104	90-110	1	10		
Sulfate	mg/L	111	50	50	169	167	115	112	90-110	1	10	M1	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92471272

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92471272

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92471272001	MW-39				
92471272001	MW-39	EPA 3010A	533116	EPA 6010D	533118
92471272001	MW-39	EPA 3010A	533117	EPA 6020B	533119
92471272001	MW-39	SM 2540C-2011	533120		
92471272001	MW-39	EPA 300.0 Rev 2.1 1993	533105		

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 Reported Project Information:
Company: GA Power	Report To: SCS Contacts
Address: Atlanta, GA	Copy To: Geosyntec Contacts
Email To: SCS Contacts	Purchase Order No.:
Phone: SCS Contacts	Project Name: Plant Hammond AP-3 Non-Routine Sampling
Requested Due Date/TAT: 24 hours	Project Number: GW6581
Section C Invoice Information:	Attention: Southern Co.
Company Name:	Address:
Reference:	Pace Quote Reference:
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY	
<input type="checkbox"/> NPDES	<input type="checkbox"/> GROUND WATER
<input type="checkbox"/> UST	<input type="checkbox"/> RCRA
<input type="checkbox"/> OTHER	<input type="checkbox"/> OTHER
Site Location STATE: GA	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATERIAL CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives					Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH = 6.82	Pace Project No./ Lab I.D.																
					DATE	TIME	DATE			TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl						NaOH	Na ₂ S ₂ O ₃	Methanol	Other												
1	MMW-39	DRINKING WATER WATER WASTE WATER PRODUCT LIQUID WIFE AIR OTHER TISSUE		G	3/27/20	1432		15:00	3								X	X	X																
2																																			
3																																			
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
11																																			
12																																			

ADDITIONAL COMMENTS				RELINQUISHED BY / AFFILIATION				ACCEPTED BY / AFFILIATION				SAMPLER CONDITIONS			
DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)		
3/27/20	15:10	3/27/20	16:30	3/27/20	15:10	3/27/20	15:10	3-28-20	1040	2.9	Y	Y	Y		
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken. *Metals=B, Ca, Li, Mo				Cloud Rivers/Geo		A. Rucker / PACE/AVL		Cloud Rivers/Geo		A.R. Rucker / PACE/AVL		AR			
				3/27/20		3/27/20		3/27/20		3/27/20		3-28-20			

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Daron Rucker		
SIGNATURE of SAMPLER:			
DATE Signed (MM/DD/YY):	03/27/2020	DATE Signed (MM/DD/YY):	03/27/2020

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition
Upon Receipt

Client Name:

GA Power

Project #:

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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *3-28-20 AR*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: *93-TOGI*

Type of Ice: Wet Blue None

Cooler Temp (°C): *2.9* Correction Factor: Add/Subtract (°C) *0*

Temp should be above freezing to 6°C

Cooler Temp Corrected (°C): *2.9*

Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3. <i>24 hour TAT</i>
Rush Turn Around Time Requested? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4. <i>24 hour TAT</i>
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <i>WT</i>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____

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

Project #

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1	/	/			/																							
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples						
Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

May 05, 2020

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

RE: Project: PLANT HAMMOND AP-3 NON ROUTINE
Pace Project No.: 2631333

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 27, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Atlanta, GA

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

Sincerely,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 2631333

Pace Analytical Services Atlanta

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

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 2631333

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2631333001	MW-39	Water	04/24/20 13:13	04/27/20 10:42

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND AP-3 NON ROUTINE
Pace Project No.: 2631333

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2631333001	MW-39	EPA 6020B	CSW	1

PASI-GA = Pace Analytical Services - Atlanta, GA

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SUMMARY OF DETECTION

Project: PLANT HAMMOND AP-3 NON ROUTINE
Pace Project No.: 2631333

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2631333001	MW-39					
EPA 6020B	Field pH	6.82	Std. Units		04/27/20 14:19	
	Molybdenum	0.062	mg/L	0.010	05/01/20 21:33	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 2631333

Sample: MW-39		Lab ID: 2631333001		Collected: 04/24/20 13:13		Received: 04/27/20 10:42		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.82	Std. Units			1		04/27/20 14:19		
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Molybdenum	0.062	mg/L	0.010	0.00095	1	04/30/20 19:54	05/01/20 21:33	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 NON ROUTINE

Pace Project No.: 2631333

QC Batch: 46010	Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A	Analysis Description: 6020B MET
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2631333001

METHOD BLANK: 213036 Matrix: Water

Associated Lab Samples: 2631333001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Molybdenum	mg/L	ND	0.010	0.00095	05/01/20 20:13	

LABORATORY CONTROL SAMPLE: 213037

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Molybdenum	mg/L	0.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 213038 213039

Parameter	Units	213038		213039		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Molybdenum	mg/L	ND	0.1	0.1	0.11	108	105	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-3 NON ROUTINE

Pace Project No.: 2631333

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND AP-3 NON ROUTINE
Pace Project No.: 2631333

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2631333001	MW-39				
2631333001	MW-39	EPA 3005A	46010	EPA 6020B	46012

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: GA Power	Report To: SCS Contacts	Attention: Southern Co.
Address: Atlanta, GA	Copy To: Geosyntec Contacts	Company Name:
Email To: SCS Contacts	Purchase Order No.:	Address:
Phone: Fax	Project Name: Plant Hammond AP-3 Non-Routine Sampling	Plant Grade:
Requested Due Date/TAT: 5 day	Project Number: GW6581	Reference: Kevin Herring
		Project Manager:
		Pres Profile #:

Valid Matrix Codes	Requested Analysis Filtered (Y/N)																																																																																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>MATRIX CODE</th> <th>DW</th> <th>WT</th> <th>WW</th> <th>P</th> <th>SL</th> <th>OL</th> <th>WIP</th> <th>AR</th> <th>OT</th> <th>TS</th> </tr> <tr> <td>DRINKING WATER</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>WATER</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>WASTE WATER</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>PRODUCT</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SOIL/SOLID</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>OIL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>WIP</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AIR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>OTHER</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TISSUE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	MATRIX CODE	DW	WT	WW	P	SL	OL	WIP	AR	OT	TS	DRINKING WATER											WATER											WASTE WATER											PRODUCT											SOIL/SOLID											OIL											WIP											AIR											OTHER											TISSUE											<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Requested Analysis Filtered (Y/N)</th> <th>Y</th> <th>N</th> </tr> <tr> <td>Molybdenum</td> <td></td> <td>X</td> </tr> </table>	Requested Analysis Filtered (Y/N)	Y	N	Molybdenum		X
MATRIX CODE	DW	WT	WW	P	SL	OL	WIP	AR	OT	TS																																																																																																																						
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ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Analysis Test		Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH = 6.82 last sample
					DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄			
1	MMW-39		WT	G	4/24	1313	18	1							
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Chad Russo / GSD	4/24/10	1550	Nedie Mclamb / Geosyntec	4/24/10	1550	
	Nedie Mclamb / Geosyntec	4/23/10	1042	Yvonne Ojeda / Pace	4/23/10	1042	
	John Orel / Pace	4/23/10	1400	David Smith / Pace	4/27/10	1400	3.3 Y N P

WO#: 2631333

2631333

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER: Chad Russo	SIGNATURE of SAMPLER: Chad Russo
DATE Signed: 4/24/2010	(MM/DD/YY):
Temp in °C	Received on Ice (Y/N)
Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)



Sample Condition Upon Receipt

Client Name: GA Power

Project #

WO#: **2631333**

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

PM: KH

Due Date: 05/11/20

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

CLIENT: 26-GA Power

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 230

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 3.3°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/27/20 CS

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 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 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)

June 02, 2020

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

RE: Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on May 26, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Asheville
- Pace Analytical Services - Atlanta, GA

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

Sincerely,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND AP-3 BKG 01

Pace Project No.: 2632217

Pace Analytical Services Atlanta

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

Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND AP-3 BKG 01

Pace Project No.: 2632217

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2632217001	HGWC-125	Water	05/22/20 12:32	05/26/20 13:12
2632217002	HGWC-126	Water	05/22/20 14:33	05/26/20 13:12

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND AP-3 BKG 01

Pace Project No.: 2632217

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2632217001	HGWC-125	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		EPA 7470A	VHB	1	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2632217002	HGWC-126	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		EPA 7470A	VHB	1	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-GA = Pace Analytical Services - Atlanta, GA

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2632217001	HGWC-125					
	Field pH	6.43	Std. Units		05/26/20 13:44	
EPA 6010D	Calcium	140	mg/L	10.0	06/01/20 13:42	
EPA 6020B	Antimony	0.00047J	mg/L	0.0030	05/28/20 15:41	
EPA 6020B	Arsenic	0.00081J	mg/L	0.0050	05/28/20 15:41	
EPA 6020B	Barium	0.048	mg/L	0.010	05/28/20 15:41	
EPA 6020B	Boron	1.5	mg/L	0.10	05/28/20 15:41	
EPA 6020B	Chromium	0.00058J	mg/L	0.010	05/28/20 15:41	
EPA 6020B	Cobalt	0.010	mg/L	0.0050	05/28/20 15:41	
EPA 6020B	Lead	0.00014J	mg/L	0.0050	05/28/20 15:41	
EPA 6020B	Lithium	0.0052J	mg/L	0.030	05/28/20 15:41	
SM 2540C	Total Dissolved Solids	809	mg/L	10.0	05/26/20 15:26	
EPA 300.0 Rev 2.1 1993	Chloride	12.9	mg/L	1.0	05/28/20 22:41	
EPA 300.0 Rev 2.1 1993	Fluoride	0.10J	mg/L	0.30	05/28/20 22:41	
EPA 300.0 Rev 2.1 1993	Sulfate	345	mg/L	7.0	05/29/20 08:49	M6
2632217002	HGWC-126					
	Field pH	7.22	Std. Units		05/26/20 13:44	
EPA 6010D	Calcium	112	mg/L	1.0	05/29/20 16:35	
EPA 6020B	Arsenic	0.00071J	mg/L	0.0050	05/28/20 15:46	
EPA 6020B	Barium	0.24	mg/L	0.010	05/28/20 15:46	
EPA 6020B	Boron	0.026J	mg/L	0.10	05/28/20 15:46	
EPA 6020B	Lithium	0.0046J	mg/L	0.030	05/28/20 15:46	
SM 2540C	Total Dissolved Solids	496	mg/L	10.0	05/26/20 15:26	
EPA 300.0 Rev 2.1 1993	Chloride	8.6	mg/L	1.0	05/28/20 23:27	
EPA 300.0 Rev 2.1 1993	Fluoride	0.46	mg/L	0.30	05/28/20 23:27	
EPA 300.0 Rev 2.1 1993	Sulfate	56.1	mg/L	1.0	05/28/20 23:27	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

Sample: HGWC-125		Lab ID: 2632217001		Collected: 05/22/20 12:32		Received: 05/26/20 13:12		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.43	Std. Units			1		05/26/20 13:44		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	140	mg/L	10.0	1.4	10	05/27/20 12:20	06/01/20 13:42	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Antimony	0.00047J	mg/L	0.0030	0.00027	1	05/26/20 15:30	05/28/20 15:41	7440-36-0	
Arsenic	0.00081J	mg/L	0.0050	0.00035	1	05/26/20 15:30	05/28/20 15:41	7440-38-2	
Barium	0.048	mg/L	0.010	0.00049	1	05/26/20 15:30	05/28/20 15:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	05/26/20 15:30	05/28/20 15:41	7440-41-7	
Boron	1.5	mg/L	0.10	0.0049	1	05/26/20 15:30	05/28/20 15:41	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	05/26/20 15:30	05/28/20 15:41	7440-43-9	
Chromium	0.00058J	mg/L	0.010	0.00039	1	05/26/20 15:30	05/28/20 15:41	7440-47-3	
Cobalt	0.010	mg/L	0.0050	0.00030	1	05/26/20 15:30	05/28/20 15:41	7440-48-4	
Lead	0.00014J	mg/L	0.0050	0.000046	1	05/26/20 15:30	05/28/20 15:41	7439-92-1	
Lithium	0.0052J	mg/L	0.030	0.00078	1	05/26/20 15:30	05/28/20 15:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	05/26/20 15:30	05/28/20 15:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	05/26/20 15:30	05/28/20 15:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	05/26/20 15:30	05/28/20 15:41	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	mg/L	0.00050	0.00014	1	05/27/20 14:45	05/29/20 12:57	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	809	mg/L	10.0	10.0	1		05/26/20 15:26		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	12.9	mg/L	1.0	0.60	1		05/28/20 22:41	16887-00-6	
Fluoride	0.10J	mg/L	0.30	0.050	1		05/28/20 22:41	16984-48-8	
Sulfate	345	mg/L	7.0	3.5	7		05/29/20 08:49	14808-79-8	M6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

Sample: HGWC-126		Lab ID: 2632217002		Collected: 05/22/20 14:33		Received: 05/26/20 13:12		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.22	Std. Units			1		05/26/20 13:44		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	112	mg/L	1.0	0.14	1	05/27/20 12:20	05/29/20 16:35	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Antimony	ND	mg/L	0.0030	0.00027	1	05/26/20 15:30	05/28/20 15:46	7440-36-0	
Arsenic	0.00071J	mg/L	0.0050	0.00035	1	05/26/20 15:30	05/28/20 15:46	7440-38-2	
Barium	0.24	mg/L	0.010	0.00049	1	05/26/20 15:30	05/28/20 15:46	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	05/26/20 15:30	05/28/20 15:46	7440-41-7	
Boron	0.026J	mg/L	0.10	0.0049	1	05/26/20 15:30	05/28/20 15:46	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	05/26/20 15:30	05/28/20 15:46	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	05/26/20 15:30	05/28/20 15:46	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	05/26/20 15:30	05/28/20 15:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	05/26/20 15:30	05/28/20 15:46	7439-92-1	
Lithium	0.0046J	mg/L	0.030	0.00078	1	05/26/20 15:30	05/28/20 15:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	05/26/20 15:30	05/28/20 15:46	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	05/26/20 15:30	05/28/20 15:46	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	05/26/20 15:30	05/28/20 15:46	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	mg/L	0.00050	0.00014	1	05/27/20 14:45	05/29/20 12:59	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	496	mg/L	10.0	10.0	1		05/26/20 15:26		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	8.6	mg/L	1.0	0.60	1		05/28/20 23:27	16887-00-6	
Fluoride	0.46	mg/L	0.30	0.050	1		05/28/20 23:27	16984-48-8	
Sulfate	56.1	mg/L	1.0	0.50	1		05/28/20 23:27	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

QC Batch: 46727 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2632217001, 2632217002

METHOD BLANK: 217607 Matrix: Water
Associated Lab Samples: 2632217001, 2632217002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	05/29/20 12:35	

LABORATORY CONTROL SAMPLE: 217608

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 217609 217610

Parameter	Units	2632217002		217610		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0022	0.0022	87	88	75-125	2	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

QC Batch: 46705 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2632217001, 2632217002

METHOD BLANK: 217460 Matrix: Water
Associated Lab Samples: 2632217001, 2632217002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	05/29/20 16:08	

LABORATORY CONTROL SAMPLE: 217461

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.90J	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 217462 217463

Parameter	Units	2632194001		217463		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	74.0	1	1	73.5	78.4	-58	433	75-125	6	20 M1

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

QC Batch: 46681 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2632217001, 2632217002

METHOD BLANK: 217394 Matrix: Water

Associated Lab Samples: 2632217001, 2632217002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	05/28/20 15:01	
Arsenic	mg/L	ND	0.0050	0.00035	05/28/20 15:01	
Barium	mg/L	ND	0.010	0.00049	05/28/20 15:01	
Beryllium	mg/L	ND	0.0030	0.000074	05/28/20 15:01	
Boron	mg/L	ND	0.10	0.0049	05/28/20 15:01	
Cadmium	mg/L	ND	0.0025	0.00011	05/28/20 15:01	
Chromium	mg/L	ND	0.010	0.00039	05/28/20 15:01	
Cobalt	mg/L	ND	0.0050	0.00030	05/28/20 15:01	
Lead	mg/L	ND	0.0050	0.000046	05/28/20 15:01	
Lithium	mg/L	ND	0.030	0.00078	05/28/20 15:01	
Molybdenum	mg/L	ND	0.010	0.00095	05/28/20 15:01	
Selenium	mg/L	ND	0.010	0.0013	05/28/20 15:01	
Thallium	mg/L	ND	0.0010	0.000052	05/28/20 15:01	

LABORATORY CONTROL SAMPLE: 217395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	105	80-120	
Arsenic	mg/L	0.1	0.10	101	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.094	94	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 217396 217397

Parameter	Units	2632194001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	101	107	75-125	6	20	
Arsenic	mg/L	0.00059J	0.1	0.1	0.10	0.10	101	103	75-125	2	20	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

Parameter	Units	217396		217397		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2632194001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.046	0.1	0.1	0.14	0.15	96	102	75-125	4	20		
Beryllium	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	1	20		
Boron	mg/L	0.024J	1	1	1.0	1.0	101	99	75-125	1	20		
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	100	102	75-125	1	20		
Chromium	mg/L	0.00044J	0.1	0.1	0.10	0.10	102	101	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.099	100	98	75-125	1	20		
Lead	mg/L	0.000089J	0.1	0.1	0.099	0.099	98	99	75-125	1	20		
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	100	102	75-125	2	20		
Molybdenum	mg/L	0.0011J	0.1	0.1	0.11	0.11	105	108	75-125	3	20		
Selenium	mg/L	0.0013J	0.1	0.1	0.10	0.10	99	103	75-125	4	20		
Thallium	mg/L	0.000088J	0.1	0.1	0.099	0.099	99	98	75-125	1	20		

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

QC Batch: 46670	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2632217001, 2632217002

LABORATORY CONTROL SAMPLE: 217336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 217337

Parameter	Units	92478357001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	358000 ug/L	372	4	10	

SAMPLE DUPLICATE: 217338

Parameter	Units	2632176001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	14700	14200	3	10	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

QC Batch: 543830 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 2632217001, 2632217002

METHOD BLANK: 2896203 Matrix: Water
Associated Lab Samples: 2632217001, 2632217002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	05/29/20 06:31	
Fluoride	mg/L	ND	0.10	0.050	05/29/20 06:31	
Sulfate	mg/L	ND	1.0	0.50	05/29/20 06:31	

LABORATORY CONTROL SAMPLE: 2896204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.4	101	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	48.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2896205 2896206

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2632217001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	12.9	50	50	65.5	66.3	105	107	90-110	1	10		
Fluoride	mg/L	0.10J	2.5	2.5	2.5	2.6	96	100	90-110	4	10		
Sulfate	mg/L	345	50	50	367	370	44	50	90-110	1	10 M6		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2896207 2896208

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92478948001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	1.0	50	50	54.5	54.7	107	107	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	107	107	90-110	0	10		
Sulfate	mg/L	3.5	50	50	56.7	56.9	106	107	90-110	0	10		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT HAMMOND AP-3 BKG 01
Pace Project No.: 2632217

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

- | | |
|----|---|
| 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-3 BKG 01
Pace Project No.: 2632217

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2632217001	HGWC-125				
2632217002	HGWC-126				
2632217001	HGWC-125	EPA 3010A	46705	EPA 6010D	46713
2632217002	HGWC-126	EPA 3010A	46705	EPA 6010D	46713
2632217001	HGWC-125	EPA 3005A	46681	EPA 6020B	46696
2632217002	HGWC-126	EPA 3005A	46681	EPA 6020B	46696
2632217001	HGWC-125	EPA 7470A	46727	EPA 7470A	46741
2632217002	HGWC-126	EPA 7470A	46727	EPA 7470A	46741
2632217001	HGWC-125	SM 2540C	46670		
2632217002	HGWC-126	SM 2540C	46670		
2632217001	HGWC-125	EPA 300.0 Rev 2.1 1993	543830		
2632217002	HGWC-126	EPA 300.0 Rev 2.1 1993	543830		

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.

2032217

Section A Required Client Information:

Company: GA Power
Address: Atlanta, GA
Email To: SCS Contacts
Phone: Fax
Requested Due Date/TAT: 5 day

Section B Required Project Information:

Report To: SCS Contacts
Copy To: Geosyntec Contacts
Purchase Order No.
Project Name: Plant Hammond AP-3 BK3 01
Project Number: GW6581

Section C Invoicing Information:

Attention: Southern Co.
Company Name
Address:
Phone/Quote Reference:
Plant Project Manager:
Plant Profile #:

REGULATORY AGENCY
NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER
Site Location: STATE: GA

Page: 1 of 1

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS		Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Face Project No./ Lab ID. pH = 7.22 pH = 7.22 Last sample
			DATE	TIME	DATE		TIME	Unpreserved				
1	HGWC-126	WT G	5/27/06	12:52 P	5	2	3	<input checked="" type="checkbox"/> Chloride, Fluoride, Sulfate <input checked="" type="checkbox"/> Metals (Full App. III and IV list) <input checked="" type="checkbox"/> Radium <input checked="" type="checkbox"/> TDS	N N N N	N		
2	HGWC-126	WT G	5/27/06	1:17 P	5	2	3		N N N N	N		

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS		Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Face Project No./ Lab ID. pH = 7.22 pH = 7.22 Last sample
			DATE	TIME	DATE		TIME	Unpreserved				
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

ADDITIONAL COMMENTS:
 Relinquished by Affiliation: Ben Weisman / Geosyntec
 Accepted by Affiliation: Media Melburn / Geosyntec
 Date: 5/27/06
 Time: 10:58 AM
 Date: 5/27/06
 Time: 11:50 AM

SAMPLER NAME AND SIGNATURE:
 PRINT Name of SAMPLER: Ben Weisman
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 5/22/06

TEMPERATURE AND CONDITION:
 Temp in °C: _____
 Received on Ice (Y/N): _____
 Custody Sealed Cooler (Y/N): _____
 Samples Intact (Y/N): _____

Important Note: By signing this form you are accepting Face's NET 30 day payment terms and agreeing to use charges of 1.5% per month for any invoices not paid within 30 days.
 F-ALL-Q-020rev.07, 15-Feb-2007



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

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

Project #

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

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

**Bottom half of box is to list number of bottle

Matrix	Item#	Item Description
	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	
	BP3U-250 mL Plastic Unpreserved (N/A)	
	BP2U-500 mL Plastic Unpreserved (N/A)	
	BP1U-1 liter Plastic Unpreserved (N/A)	
	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	
	BP3M-250 mL Plastic HNO3 (pH < 2)	
	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	
	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	
	WGFU-Wide-mouthed Glass Jar Unpreserved	
	AG1U-1 liter Amber Unpreserved (N/A) (C-)	
	AG1R-1 liter Amber-HCl (pH < 2)	
	AG3U-250 mL Amber Unpreserved (N/A) (C-)	
	AG1S-1 liter Amber H2SO4 (pH < 2)	
	AG3S-250 mL Amber H2SO4 (pH < 2)	
	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	
	DG9H-40 mL VOA HCl (N/A)	
	VG9T-40 mL VOA Na2S2O3 (N/A)	
	VG9U-40 mL VOA Unp (N/A)	
	DG9P-40 mL VOA H3PO4 (N/A)	
	VOAK (6 vials per kit)-5035 kit (N/A)	
	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	
	SP5T-125 mL Sterile Plastic (N/A - lab)	
	SP2T-250 mL Sterile Plastic (N/A - lab)	
	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	
	AG9U-100 mL Amber Unpreserved vials (N/A)	
	VS9U-20 mL Scintillation vials (N/A)	

Handwritten: BIN

pH Adjustment Log for Preserved Samples

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

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



Sample Condition Upon Receipt

Client Name: GA 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 233 Type of Ice: Wet Blue None Samples or ice, cooling process has begun

Cooler Temperature 0.1°C Biological Tissue is Frozen: Yes No

Optional
Proj. Due Date:
Proj. Name:

Date and Initials of person examining contents: 5/26/20 12/14

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 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
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: _____ 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 09, 2020

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

RE: Project: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92482100

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 16, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-3 NON ROUTINE RADs
Pace Project No.: 92482100

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Florida: Cert E871149 SEKS WET
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: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92482100

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92482100001	MW-41	Water	06/15/20 16:37	06/16/20 14:17
92482100002	FB-03	Water	06/15/20 16:45	06/16/20 14:17

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92482100

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92482100001	MW-41	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482100002	FB-03	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92482100

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482100001	MW-41					
EPA 9315	Radium-226	0.328 ± 0.132 (0.183) C:91% T:NA	pCi/L		06/25/20 17:54	
EPA 9320	Radium-228	0.620 ± 0.464 (0.915) C:62% T:86%	pCi/L		07/06/20 16:01	
Total Radium Calculation	Total Radium	0.948 ± 0.596 (1.10)	pCi/L		07/07/20 12:47	
92482100002	FB-03					
EPA 9315	Radium-226	0.0257 ± 0.101 (0.206) C:88% T:NA	pCi/L		06/25/20 20:24	
EPA 9320	Radium-228	-0.240 ± 0.408 (1.00) C:59% T:82%	pCi/L		07/06/20 16:01	
Total Radium Calculation	Total Radium	0.0257 ± 0.509 (1.21)	pCi/L		07/07/20 12:47	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92482100

Sample: MW-41 **Lab ID: 92482100001** Collected: 06/15/20 16:37 Received: 06/16/20 14:17 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.328 ± 0.132 (0.183) C:91% T:NA	pCi/L	06/25/20 17:54	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.620 ± 0.464 (0.915) C:62% T:86%	pCi/L	07/06/20 16:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.948 ± 0.596 (1.10)	pCi/L	07/07/20 12:47	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92482100

Sample: FB-03 **Lab ID: 92482100002** Collected: 06/15/20 16:45 Received: 06/16/20 14:17 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0257 ± 0.101 (0.206) C:88% T:NA	pCi/L	06/25/20 20:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.240 ± 0.408 (1.00) C:59% T:82%	pCi/L	07/06/20 16:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.0257 ± 0.509 (1.21)	pCi/L	07/07/20 12:47	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92482100

QC Batch: 402596

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92482100001, 92482100002

METHOD BLANK: 1948602

Matrix: Water

Associated Lab Samples: 92482100001, 92482100002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.856 ± 0.506 (0.940) C:63% T:80%	pCi/L	07/06/20 16:00	

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: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92482100

QC Batch: 402098

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92482100001, 92482100002

METHOD BLANK: 1946552

Matrix: Water

Associated Lab Samples: 92482100001, 92482100002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0618 ± 0.0814 (0.155) C:86% T:NA	pCi/L	06/25/20 20:33	

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: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92482100

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92482100

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482100001	MW-41	EPA 9315	402098		
92482100002	FB-03	EPA 9315	402098		
92482100001	MW-41	EPA 9320	402596		
92482100002	FB-03	EPA 9320	402596		
92482100001	MW-41	Total Radium Calculation	403995		
92482100002	FB-03	Total Radium Calculation	403995		

REPORT OF LABORATORY ANALYSIS

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: JJY
Date: 6/25/2020
Worklist: 54765
Matrix: DW

Method Blank Assessment	
MB Sample ID	1946552
MB concentration:	0.062
M/B Counting Uncertainty:	0.081
MB MDC:	0.155
MB Numerical Performance Indicator:	1.50
MB Status vs. Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	Y
Count Date:		LCS54765	LCS54765
Spike I.D.:		6/25/2020	6/25/2020
Decay Corrected Spike Concentration (pCi/mL):		19-033	19-033
Volume Used (mL):		24.047	24.047
Aliquot Volume (L, g, F):		0.10	0.10
Target Conc. (pCi/L, g, F):		0.503	0.503
Uncertainty (Calculated):		4.785	4.785
Result (pCi/L, g, F):		0.057	0.057
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		4.519	4.717
Numerical Performance Indicator:		0.343	0.368
Percent Recovery:		-1.50	-0.37
Status vs Numerical Indicator:		94.44%	98.57%
Upper % Recovery Limits:		N/A	N/A
Lower % Recovery Limits:		Pass	Pass
		125%	125%
		75%	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS54765
Duplicate Sample I.D.:	LCS54765
Sample Result (pCi/L, g, F):	4.519
Sample Duplicate Result (pCi/L, g, F):	0.343
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	4.717
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.358
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.781
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	4.23%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

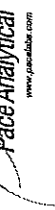
Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:
Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance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

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

Comments:

LAN 6/26/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 7/1/2020
Worklist: 54819
Matrix: WT

Method Blank Assessment	
MB Sample ID	1948602
MB concentration:	0.856
M/B 2 Sigma CSU:	0.506
MB MDC:	0.940
MB Numerical Performance Indicator:	3.31
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS54819	LCS54819
Count Date:	7/6/2020	7/6/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	33.559	33.559
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.810	0.820
Target Conc. (pCi/L, g, F):	4.142	4.093
Uncertainty (Calculated):	0.298	0.295
Result (pCi/L, g, F):	4.306	4.401
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.098	1.097
Numerical Performance Indicator:	0.28	0.53
Percent Recovery:	103.98%	107.53%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	LCS (Y or N)?	
	LCS54819	LCS54819
Sample I.D.:	LCS54819	LCS54819
Duplicate Sample I.D.:	4.306	4.306
Sample Result (pCi/L, g, F):	1.098	1.098
Sample Duplicate Result (pCi/L, g, F):	4.401	4.401
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.097	1.097
Are sample and/or duplicate results below RL?	NO	NO
Duplicate Numerical Performance Indicator:	-0.119	-0.119
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	3.36%	3.36%
Duplicate Status vs Numerical Indicator:	Pass	Pass
Duplicate Status vs RPD:	Pass	Pass
% RPD Limit:	36%	36%

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

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

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

Comments:

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

[Handwritten signature]

July 01, 2020

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

RE: Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 16, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

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

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

Sincerely,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

Pace Analytical Services Charlotte

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

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

Pace Analytical Services Asheville

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

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

Pace Analytical Services Peachtree Corners

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92482102001	MW-41	Water	06/15/20 16:37	06/16/20 14:17
92482102002	HGWC-120	Water	06/15/20 15:45	06/16/20 14:17
92482102003	FB-03	Water	06/15/20 16:45	06/16/20 14:17

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92482102001	MW-41	EPA 6010D	DRB	6
		EPA 6020B	CW1	7
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482102002	HGWC-120	EPA 6010D	DRB	6
		EPA 6020B	CW1	1
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482102003	FB-03	EPA 6010D	DRB	6
		EPA 6020B	CW1	7
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3

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

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482102001	MW-41					
	pH	6.88	Std. Units		06/30/20 17:09	
EPA 6010D	Calcium	174	mg/L	1.0	06/19/20 16:13	M1
EPA 6010D	Iron	0.20	mg/L	0.040	06/19/20 16:13	
EPA 6010D	Magnesium	23.4	mg/L	0.050	06/19/20 16:13	M1
EPA 6010D	Manganese	0.88	mg/L	0.040	06/19/20 16:13	
EPA 6010D	Potassium	6.5	mg/L	0.20	06/19/20 16:13	M1
EPA 6010D	Sodium	9.6	mg/L	1.0	06/19/20 16:13	M1
EPA 6020B	Barium	0.074	mg/L	0.010	06/19/20 14:24	
EPA 6020B	Boron	1.2	mg/L	0.10	06/19/20 14:24	
EPA 6020B	Cobalt	0.0012J	mg/L	0.0050	06/19/20 14:24	
EPA 6020B	Lithium	0.028J	mg/L	0.030	06/19/20 14:24	
EPA 6020B	Molybdenum	0.035	mg/L	0.010	06/19/20 14:24	
SM 2450C-2011	Total Dissolved Solids	674	mg/L	10.0	06/17/20 12:31	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	315	mg/L	5.0	06/26/20 16:00	
SM 2320B-2011	Alkalinity, Total as CaCO3	315	mg/L	5.0	06/26/20 16:00	
EPA 300.0 Rev 2.1 1993	Chloride	2.3	mg/L	1.0	06/18/20 04:14	
EPA 300.0 Rev 2.1 1993	Fluoride	0.21	mg/L	0.10	06/18/20 04:14	
EPA 300.0 Rev 2.1 1993	Sulfate	219	mg/L	5.0	06/18/20 07:25	
92482102002	HGWC-120					
	pH	6.80	Std. Units		06/30/20 17:09	
EPA 6010D	Calcium	175	mg/L	1.0	06/19/20 16:30	
EPA 6010D	Iron	0.70	mg/L	0.040	06/19/20 16:30	
EPA 6010D	Magnesium	23.6	mg/L	0.050	06/19/20 16:30	
EPA 6010D	Manganese	1.5	mg/L	0.040	06/19/20 16:30	
EPA 6010D	Potassium	7.3	mg/L	0.20	06/19/20 16:30	
EPA 6010D	Sodium	9.3	mg/L	1.0	06/19/20 16:30	
EPA 6020B	Boron	1.1	mg/L	0.10	06/19/20 14:47	
SM 2450C-2011	Total Dissolved Solids	685	mg/L	10.0	06/17/20 12:31	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	309	mg/L	5.0	06/26/20 16:26	
SM 2320B-2011	Alkalinity, Total as CaCO3	309	mg/L	5.0	06/26/20 16:26	
EPA 300.0 Rev 2.1 1993	Chloride	2.3	mg/L	1.0	06/18/20 04:28	
EPA 300.0 Rev 2.1 1993	Fluoride	0.37	mg/L	0.10	06/18/20 04:28	
EPA 300.0 Rev 2.1 1993	Sulfate	212	mg/L	5.0	06/18/20 07:50	
92482102003	FB-03					
EPA 6010D	Magnesium	0.014J	mg/L	0.050	06/19/20 16:34	
EPA 6010D	Potassium	0.028J	mg/L	0.20	06/19/20 16:34	
EPA 6020B	Barium	0.0021J	mg/L	0.010	06/19/20 14:53	
EPA 6020B	Boron	0.0095J	mg/L	0.10	06/19/20 14:53	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92484261

Sample: MW-41 Lab ID: 92482102001 Collected: 06/15/20 16:37 Received: 06/16/20 14:17 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.88	Std. Units			1		06/30/20 17:09		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	174	mg/L	1.0	0.14	1	06/18/20 16:00	06/19/20 16:13	7440-70-2	M1
Iron	0.20	mg/L	0.040	0.015	1	06/18/20 16:00	06/19/20 16:13	7439-89-6	
Magnesium	23.4	mg/L	0.050	0.011	1	06/18/20 16:00	06/19/20 16:13	7439-95-4	M1
Manganese	0.88	mg/L	0.040	0.0061	1	06/18/20 16:00	06/19/20 16:13	7439-96-5	
Potassium	6.5	mg/L	0.20	0.026	1	06/18/20 16:00	06/19/20 16:13	7440-09-7	M1
Sodium	9.6	mg/L	1.0	0.19	1	06/18/20 16:00	06/19/20 16:13	7440-23-5	M1
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Barium	0.074	mg/L	0.010	0.00049	1	06/18/20 13:00	06/19/20 14:24	7440-39-3	
Boron	1.2	mg/L	0.10	0.0049	1	06/18/20 13:00	06/19/20 14:24	7440-42-8	
Chromium	ND	mg/L	0.010	0.00039	1	06/18/20 13:00	06/19/20 14:24	7440-47-3	
Cobalt	0.0012J	mg/L	0.0050	0.00030	1	06/18/20 13:00	06/19/20 14:24	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	06/18/20 13:00	06/19/20 14:24	7439-92-1	
Lithium	0.028J	mg/L	0.030	0.00078	1	06/18/20 13:00	06/19/20 14:24	7439-93-2	
Molybdenum	0.035	mg/L	0.010	0.00095	1	06/18/20 13:00	06/19/20 14:24	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	674	mg/L	10.0	10.0	1		06/17/20 12:31		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	315	mg/L	5.0	5.0	1		06/26/20 16:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/26/20 16:00		
Alkalinity, Total as CaCO3	315	mg/L	5.0	5.0	1		06/26/20 16:00		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/17/20 22:02	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	2.3	mg/L	1.0	0.60	1		06/18/20 04:14	16887-00-6	
Fluoride	0.21	mg/L	0.10	0.050	1		06/18/20 04:14	16984-48-8	
Sulfate	219	mg/L	5.0	2.5	5		06/18/20 07:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

Sample: HGWC-120		Lab ID: 92482102002		Collected: 06/15/20 15:45		Received: 06/16/20 14:17		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.80	Std. Units			1		06/30/20 17:09		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	175	mg/L	1.0	0.14	1	06/18/20 16:00	06/19/20 16:30	7440-70-2	
Iron	0.70	mg/L	0.040	0.015	1	06/18/20 16:00	06/19/20 16:30	7439-89-6	
Magnesium	23.6	mg/L	0.050	0.011	1	06/18/20 16:00	06/19/20 16:30	7439-95-4	
Manganese	1.5	mg/L	0.040	0.0061	1	06/18/20 16:00	06/19/20 16:30	7439-96-5	
Potassium	7.3	mg/L	0.20	0.026	1	06/18/20 16:00	06/19/20 16:30	7440-09-7	
Sodium	9.3	mg/L	1.0	0.19	1	06/18/20 16:00	06/19/20 16:30	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Boron	1.1	mg/L	0.10	0.0049	1	06/18/20 13:00	06/19/20 14:47	7440-42-8	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	685	mg/L	10.0	10.0	1		06/17/20 12:31		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	309	mg/L	5.0	5.0	1		06/26/20 16:26		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/26/20 16:26		
Alkalinity, Total as CaCO ₃	309	mg/L	5.0	5.0	1		06/26/20 16:26		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/17/20 22:03	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	2.3	mg/L	1.0	0.60	1		06/18/20 04:28	16887-00-6	
Fluoride	0.37	mg/L	0.10	0.050	1		06/18/20 04:28	16984-48-8	
Sulfate	212	mg/L	5.0	2.5	5		06/18/20 07:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

Sample: FB-03		Lab ID: 92482102003		Collected: 06/15/20 16:45	Received: 06/16/20 14:17	Matrix: Water			
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA							
Calcium	ND	mg/L	1.0	0.14	1	06/18/20 16:00	06/19/20 16:34	7440-70-2	
Iron	ND	mg/L	0.040	0.015	1	06/18/20 16:00	06/19/20 16:34	7439-89-6	
Magnesium	0.014J	mg/L	0.050	0.011	1	06/18/20 16:00	06/19/20 16:34	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	06/18/20 16:00	06/19/20 16:34	7439-96-5	
Potassium	0.028J	mg/L	0.20	0.026	1	06/18/20 16:00	06/19/20 16:34	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	06/18/20 16:00	06/19/20 16:34	7440-23-5	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA							
Barium	0.0021J	mg/L	0.010	0.00049	1	06/18/20 13:00	06/19/20 14:53	7440-39-3	
Boron	0.0095J	mg/L	0.10	0.0049	1	06/18/20 13:00	06/19/20 14:53	7440-42-8	
Chromium	ND	mg/L	0.010	0.00039	1	06/18/20 13:00	06/19/20 14:53	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/18/20 13:00	06/19/20 14:53	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	06/18/20 13:00	06/19/20 14:53	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	06/18/20 13:00	06/19/20 14:53	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/18/20 13:00	06/19/20 14:53	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA							
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		06/17/20 12:32		
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/25/20 18:37		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/25/20 18:37		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		06/25/20 18:37		
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville							
Sulfide	ND	mg/L	0.10	0.050	1		06/17/20 22:03	18496-25-8	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	ND	mg/L	1.0	0.60	1		06/18/20 04:41	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		06/18/20 04:41	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		06/18/20 04:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

QC Batch: 548325 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482102001, 92482102002, 92482102003

METHOD BLANK: 2917356 Matrix: Water
Associated Lab Samples: 92482102001, 92482102002, 92482102003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/19/20 15:48	
Iron	mg/L	ND	0.040	0.015	06/19/20 15:48	
Magnesium	mg/L	ND	0.050	0.011	06/19/20 15:48	
Manganese	mg/L	ND	0.040	0.0061	06/19/20 15:48	
Potassium	mg/L	ND	0.20	0.026	06/22/20 12:08	
Sodium	mg/L	ND	1.0	0.19	06/22/20 12:08	

LABORATORY CONTROL SAMPLE: 2917357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	
Iron	mg/L	1	1.0	104	80-120	
Magnesium	mg/L	1	1.1	106	80-120	
Manganese	mg/L	1	1.0	101	80-120	
Potassium	mg/L	1	0.98	98	80-120	
Sodium	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2917358 2917359

Parameter	Units	2917358		2917359		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	174	1	174	182	-20	757	75-125	4	20	M1
Iron	mg/L	0.20	1	1.2	1.3	103	108	75-125	4	20	
Magnesium	mg/L	23.4	1	24.3	25.4	94	206	75-125	5	20	M1
Manganese	mg/L	0.88	1	1.9	1.9	98	104	75-125	3	20	
Potassium	mg/L	6.5	1	7.5	7.8	101	134	75-125	4	20	M1
Sodium	mg/L	9.6	1	10.6	11.0	100	140	75-125	4	20	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

QC Batch: 548037 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482102001, 92482102002, 92482102003

METHOD BLANK: 2915983 Matrix: Water
Associated Lab Samples: 92482102001, 92482102002, 92482102003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	mg/L	ND	0.010	0.00049	06/19/20 14:13	
Boron	mg/L	ND	0.10	0.0049	06/19/20 14:13	
Chromium	mg/L	ND	0.010	0.00039	06/19/20 14:13	
Cobalt	mg/L	ND	0.0050	0.00030	06/19/20 14:13	
Lead	mg/L	ND	0.0050	0.000046	06/19/20 14:13	
Lithium	mg/L	ND	0.030	0.00078	06/19/20 14:13	
Molybdenum	mg/L	ND	0.010	0.00095	06/19/20 14:13	

LABORATORY CONTROL SAMPLE: 2915984

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.1	0.11	107	80-120	
Boron	mg/L	1	1.1	106	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Lead	mg/L	0.1	0.11	105	80-120	
Lithium	mg/L	0.1	0.11	108	80-120	
Molybdenum	mg/L	0.1	0.11	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2915985 2915986

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482102001 Result	Spike Conc.	Spike Conc.	Result						
Barium	mg/L	0.074	0.1	0.1	0.18	109	104	75-125	3	20	
Boron	mg/L	1.2	1	1	2.2	97	98	75-125	1	20	
Chromium	mg/L	ND	0.1	0.1	0.10	101	99	75-125	2	20	
Cobalt	mg/L	0.0012J	0.1	0.1	0.10	99	97	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.094	94	93	75-125	1	20	
Lithium	mg/L	0.028J	0.1	0.1	0.12	97	99	75-125	2	20	
Molybdenum	mg/L	0.035	0.1	0.1	0.14	107	102	75-125	3	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

QC Batch: 547895 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482102001, 92482102002, 92482102003

METHOD BLANK: 2915268 Matrix: Water
Associated Lab Samples: 92482102001, 92482102002, 92482102003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/17/20 12:19	

LABORATORY CONTROL SAMPLE: 2915269

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	393	98	84-108	

SAMPLE DUPLICATE: 2915270

Parameter	Units	92481784002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	173	185	7	10	

SAMPLE DUPLICATE: 2915271

Parameter	Units	92482159003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	53.0	69.0	26	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92484261

QC Batch: 549596

Analysis Method: SM 2320B-2011

QC Batch Method: SM 2320B-2011

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92482102003

METHOD BLANK: 2922662

Matrix: Water

Associated Lab Samples: 92482102003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	06/25/20 15:12	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	06/25/20 15:12	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	06/25/20 15:12	

LABORATORY CONTROL SAMPLE: 2922663

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	50.6	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2922664 2922665

Parameter	Units	92482282002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Alkalinity, Total as CaCO ₃	mg/L	ND	50	50	ND	ND	0	0	0	80-120		25	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2922668 2922669

Parameter	Units	92482295007		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Alkalinity, Total as CaCO ₃	mg/L	1450	50	50	1510	1540	120	193	193	80-120	2	25	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92484261

QC Batch: 549850

Analysis Method: SM 2320B-2011

QC Batch Method: SM 2320B-2011

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92482102001, 92482102002

METHOD BLANK: 2923880

Matrix: Water

Associated Lab Samples: 92482102001, 92482102002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	06/26/20 15:49	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	06/26/20 15:49	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	06/26/20 15:49	

LABORATORY CONTROL SAMPLE: 2923881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	49.8	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2923882 2923883

Parameter	Units	92482102001		92482102002		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Alkalinity, Total as CaCO ₃	mg/L	315	50	50	368	366	106	102	80-120	1	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2923884 2923885

Parameter	Units	92482846009		92482846009		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Alkalinity, Total as CaCO ₃	mg/L	29.7	50	50	78.4	74.0	97	89	80-120	6	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

QC Batch: 547966 Analysis Method: SM 4500-S2D-2011
QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482102001, 92482102002, 92482102003

METHOD BLANK: 2915621 Matrix: Water
Associated Lab Samples: 92482102001, 92482102002, 92482102003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	06/17/20 21:55	

LABORATORY CONTROL SAMPLE: 2915622

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.52	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2915623 2915624

Parameter	Units	92481787008 Result	MS	MSD	MS	MSD	MS	MSD	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Sulfide	mg/L	ND	0.5	0.5	0.40	0.49	80	97	80-120	19	10	R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2915625 2915626

Parameter	Units	92481787009 Result	MS	MSD	MS	MSD	MS	MSD	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Sulfide	mg/L	ND	0.5	0.5	0.28	0.40	53	77	80-120	35	10	M1,R1

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

QC Batch: 547886 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482102001, 92482102002, 92482102003

METHOD BLANK: 2915194 Matrix: Water
Associated Lab Samples: 92482102001, 92482102002, 92482102003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/17/20 22:52	
Fluoride	mg/L	ND	0.10	0.050	06/17/20 22:52	
Sulfate	mg/L	ND	1.0	0.50	06/17/20 22:52	

LABORATORY CONTROL SAMPLE: 2915195

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.1	96	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	50	48.1	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2915196 2915197

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92479841001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	210	50	50	254	255	90	92	90-110	0	10		
Fluoride	mg/L	0.97	2.5	2.5	3.6	3.6	103	105	90-110	1	10		
Sulfate	mg/L	260	50	50	306	307	92	94	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2915198 2915199

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482012003 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	3.0	50	50	55.7	55.2	105	104	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	102	101	90-110	1	10		
Sulfate	mg/L	ND	50	50	52.9	52.4	105	104	90-110	1	10		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92484261

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92484261

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482102001	MW-41				
92482102002	HGWC-120				
92482102001	MW-41	EPA 3010A	548325	EPA 6010D	548371
92482102002	HGWC-120	EPA 3010A	548325	EPA 6010D	548371
92482102003	FB-03	EPA 3010A	548325	EPA 6010D	548371
92482102001	MW-41	EPA 3005A	548037	EPA 6020B	548275
92482102002	HGWC-120	EPA 3005A	548037	EPA 6020B	548275
92482102003	FB-03	EPA 3005A	548037	EPA 6020B	548275
92482102001	MW-41	SM 2450C-2011	547895		
92482102002	HGWC-120	SM 2450C-2011	547895		
92482102003	FB-03	SM 2450C-2011	547895		
92482102001	MW-41	SM 2320B-2011	549850		
92482102002	HGWC-120	SM 2320B-2011	549850		
92482102003	FB-03	SM 2320B-2011	549596		
92482102001	MW-41	SM 4500-S2D-2011	547966		
92482102002	HGWC-120	SM 4500-S2D-2011	547966		
92482102003	FB-03	SM 4500-S2D-2011	547966		
92482102001	MW-41	EPA 300.0 Rev 2.1 1993	547886		
92482102002	HGWC-120	EPA 300.0 Rev 2.1 1993	547886		
92482102003	FB-03	EPA 300.0 Rev 2.1 1993	547886		

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 and

MO# : 92482102

Section A Required Client Information		Section B Required Project Information		Section C Reference Information	
Company	GA Power	Report to SCS Contacts	Attention	Southern Co.	
Address	Atlanta, GA	Copy To	Geosynthetic Contacts		
Email To	SCS Contacts	Purchase Order No.	Company Name	Address	
Phone	Fac	Project Name	Plant Hammond AP-3 Non-Routine	Price Quote	Reference
Requested Due Date/TAT:	5 Day	Project Number	GW6581	Project Request Manager	Kevin Henning
				Field Profile #	
				REGULATORY AGENCY	
				NPDES	GROUND WATER
				UST	RORO
				Site Location	OTHER (WH)
				STATE:	GA

ITEM #	Section D Request Client Information	Valid Matrix Codes MATRIX CODE	EQUIPMENT CODE	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES							Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH =	
				DATE	TIME	DATE			TIME	DATE	TIME	DATE	TIME	DATE	TIME					DATE
1	HGMG-126	WT G	WT G																	
2	HGMG-125	WT G	WT G																	
3	HGMG-126	WT G	WT G																	
4	MMW-41	WT G	WT G																	
5	FB-05	WT G	WT G																	
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS		REQUISITIONED BY/AFFILIATION		DATE		TIME		ACCEPTED BY/AFFILIATION		DATE		TIME		SAMPLE CONDITIONS	
*Full App. III Metals = Sr, As, Ba, Be, Cd, Co, Cr, Hg, U, Mo, Pb, Se, Th		Chad Russo / SCS		6/15/10		1905		Mollie McMillan / SCS		6/15/10		1900		Temp in °C	
** AP-3 Detected App. IV Metals = Ba, Cr, Co, Pd, U, Sr		Mollie McMillan / Geosynthetic		6/16/10		1255		Chad Russo / SCS		6/16/10		055		Received on Ice (Y/N)	
*** Major Ion Metals = Fe, Mg, Mn, K, Na		Chad Russo / SCS		6/15/10		1905		Mollie McMillan / SCS		6/16/10		055		Custody Sealed Cooler (Y/N)	
		Chad Russo / SCS		6/15/10		1905		Mollie McMillan / SCS		6/16/10		055		Samples Intact (Y/N)	

Important Note: By signing this form you are accepting Face's NET 30 day payment terms and agreeing to pay samples at 1.25 per month for any invoices not paid within 30 days.

July 09, 2020

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

RE: Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between June 16, 2020 and June 17, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

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

This report was revised 7/9/20 due to a change in TDS results for sample HGWC-126 from a DQR request. The new result is more inline with historical results.

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

Sincerely,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

Pace Analytical Services Charlotte

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

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

Pace Analytical Services Asheville

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

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

Pace Analytical Services Peachtree Corners

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92482102004	HGWC-125	Water	06/16/20 10:30	06/17/20 10:57
92482102005	HGWC-126	Water	06/16/20 12:16	06/17/20 10:57
92482102003	FB-03	Water	06/15/20 16:45	06/16/20 14:17

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92482102004	HGWC-125	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	VB	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482102005	HGWC-126	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482102003	FB-03	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	CDC	3

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

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 NON ROUTINE
 Pace Project No.: 92482102

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482102004	HGWC-125					
	pH	6.29	Std. Units		06/30/20 17:09	
EPA 6010D	Calcium	178	mg/L	1.0	06/19/20 16:38	
EPA 6020B	Arsenic	0.0014J	mg/L	0.0050	06/19/20 14:58	
EPA 6020B	Barium	0.049	mg/L	0.010	06/19/20 14:58	
EPA 6020B	Boron	1.5	mg/L	0.10	06/19/20 14:58	
EPA 6020B	Chromium	0.00052J	mg/L	0.010	06/19/20 14:58	
EPA 6020B	Cobalt	0.0096	mg/L	0.0050	06/19/20 14:58	
EPA 6020B	Lead	0.00013J	mg/L	0.0050	06/19/20 14:58	
EPA 6020B	Lithium	0.0053J	mg/L	0.030	06/19/20 14:58	
SM 2450C-2011	Total Dissolved Solids	665	mg/L	10.0	06/18/20 10:56	D6
EPA 300.0 Rev 2.1 1993	Chloride	10.4	mg/L	1.0	06/24/20 21:44	
EPA 300.0 Rev 2.1 1993	Fluoride	0.12	mg/L	0.10	06/24/20 21:44	
EPA 300.0 Rev 2.1 1993	Sulfate	320	mg/L	7.0	06/25/20 07:41	
92482102005	HGWC-126					
	pH	6.92	Std. Units		06/30/20 17:09	
EPA 6010D	Calcium	131	mg/L	1.0	06/19/20 16:42	
EPA 6020B	Arsenic	0.00091J	mg/L	0.0050	06/19/20 15:04	
EPA 6020B	Barium	0.24	mg/L	0.010	06/19/20 15:04	
EPA 6020B	Boron	0.023J	mg/L	0.10	06/19/20 15:04	
EPA 6020B	Lithium	0.0045J	mg/L	0.030	06/19/20 15:04	
SM 2450C-2011	Total Dissolved Solids	508	mg/L	10.0	07/07/20 13:47	1g,H1
EPA 300.0 Rev 2.1 1993	Chloride	8.6	mg/L	1.0	06/24/20 21:59	
EPA 300.0 Rev 2.1 1993	Fluoride	0.44	mg/L	0.10	06/24/20 21:59	
EPA 300.0 Rev 2.1 1993	Sulfate	57.6	mg/L	1.0	06/24/20 21:59	
92482102003	FB-03					
EPA 6020B	Antimony	0.00036J	mg/L	0.0030	06/19/20 14:53	
EPA 6020B	Barium	0.0021J	mg/L	0.010	06/19/20 14:53	
EPA 6020B	Boron	0.0095J	mg/L	0.10	06/19/20 14:53	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92482102

Sample: HGWC-125		Lab ID: 92482102004		Collected: 06/16/20 10:30		Received: 06/17/20 10:57		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.29	Std. Units			1		06/30/20 17:09		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	178	mg/L	1.0	0.14	1	06/18/20 16:00	06/19/20 16:38	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00027	1	06/18/20 13:00	06/19/20 14:58	7440-36-0	
Arsenic	0.0014J	mg/L	0.0050	0.00035	1	06/18/20 13:00	06/19/20 14:58	7440-38-2	
Barium	0.049	mg/L	0.010	0.00049	1	06/18/20 13:00	06/19/20 14:58	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/18/20 13:00	06/19/20 14:58	7440-41-7	
Boron	1.5	mg/L	0.10	0.0049	1	06/18/20 13:00	06/19/20 14:58	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/18/20 13:00	06/19/20 14:58	7440-43-9	
Chromium	0.00052J	mg/L	0.010	0.00039	1	06/18/20 13:00	06/19/20 14:58	7440-47-3	
Cobalt	0.0096	mg/L	0.0050	0.00030	1	06/18/20 13:00	06/19/20 14:58	7440-48-4	
Lead	0.00013J	mg/L	0.0050	0.000046	1	06/18/20 13:00	06/19/20 14:58	7439-92-1	
Lithium	0.0053J	mg/L	0.030	0.00078	1	06/18/20 13:00	06/19/20 14:58	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/18/20 13:00	06/19/20 14:58	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/18/20 13:00	06/19/20 14:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/18/20 13:00	06/19/20 14:58	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.00014	1	06/22/20 09:35	06/22/20 14:30	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	665	mg/L	10.0	10.0	1		06/18/20 10:56		D6
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	10.4	mg/L	1.0	0.60	1		06/24/20 21:44	16887-00-6	
Fluoride	0.12	mg/L	0.10	0.050	1		06/24/20 21:44	16984-48-8	
Sulfate	320	mg/L	7.0	3.5	7		06/25/20 07:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92482102

Sample: HGWC-126		Lab ID: 92482102005		Collected: 06/16/20 12:16		Received: 06/17/20 10:57		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.92	Std. Units			1		06/30/20 17:09		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	131	mg/L	1.0	0.14	1	06/18/20 16:00	06/19/20 16:42	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00027	1	06/18/20 13:00	06/19/20 15:04	7440-36-0	
Arsenic	0.00091J	mg/L	0.0050	0.00035	1	06/18/20 13:00	06/19/20 15:04	7440-38-2	
Barium	0.24	mg/L	0.010	0.00049	1	06/18/20 13:00	06/19/20 15:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/18/20 13:00	06/19/20 15:04	7440-41-7	
Boron	0.023J	mg/L	0.10	0.0049	1	06/18/20 13:00	06/19/20 15:04	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/18/20 13:00	06/19/20 15:04	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	06/18/20 13:00	06/19/20 15:04	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/18/20 13:00	06/19/20 15:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	06/18/20 13:00	06/19/20 15:04	7439-92-1	
Lithium	0.0045J	mg/L	0.030	0.00078	1	06/18/20 13:00	06/19/20 15:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/18/20 13:00	06/19/20 15:04	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/18/20 13:00	06/19/20 15:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/18/20 13:00	06/19/20 15:04	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.00014	1	06/22/20 09:35	06/22/20 14:32	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	508	mg/L	10.0	10.0	1		07/07/20 13:47		1g,H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	8.6	mg/L	1.0	0.60	1		06/24/20 21:59	16887-00-6	
Fluoride	0.44	mg/L	0.10	0.050	1		06/24/20 21:59	16984-48-8	
Sulfate	57.6	mg/L	1.0	0.50	1		06/24/20 21:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

Sample: FB-03		Lab ID: 92482102003		Collected: 06/15/20 16:45		Received: 06/16/20 14:17		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.14	1	06/18/20 16:00	06/19/20 16:34	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	0.00036J	mg/L	0.0030	0.00027	1	06/18/20 13:00	06/19/20 14:53	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	06/18/20 13:00	06/19/20 14:53	7440-38-2		
Barium	0.0021J	mg/L	0.010	0.00049	1	06/18/20 13:00	06/19/20 14:53	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	06/18/20 13:00	06/19/20 14:53	7440-41-7		
Boron	0.0095J	mg/L	0.10	0.0049	1	06/18/20 13:00	06/19/20 14:53	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	06/18/20 13:00	06/19/20 14:53	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	06/18/20 13:00	06/19/20 14:53	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	06/18/20 13:00	06/19/20 14:53	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	06/18/20 13:00	06/19/20 14:53	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	06/18/20 13:00	06/19/20 14:53	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	06/18/20 13:00	06/19/20 14:53	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	06/18/20 13:00	06/19/20 14:53	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	06/18/20 13:00	06/19/20 14:53	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.00014	1	06/22/20 09:35	06/22/20 14:27	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		06/17/20 12:32			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		06/18/20 04:41	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		06/18/20 04:41	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		06/18/20 04:41	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

QC Batch: 548325 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482102003, 92482102004, 92482102005

METHOD BLANK: 2917356 Matrix: Water
Associated Lab Samples: 92482102003, 92482102004, 92482102005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/19/20 15:48	

LABORATORY CONTROL SAMPLE: 2917357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2917358 2917359

Parameter	Units	2917358		2917359		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	174	1	1	174	182	-20	757	75-125	4	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

QC Batch: 548037 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482102003, 92482102004, 92482102005

METHOD BLANK: 2915983 Matrix: Water
Associated Lab Samples: 92482102003, 92482102004, 92482102005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0050	0.00027	06/19/20 14:13	
Arsenic	mg/L	ND	0.0050	0.00035	06/19/20 14:13	
Barium	mg/L	ND	0.010	0.00049	06/19/20 14:13	
Beryllium	mg/L	ND	0.0030	0.000074	06/19/20 14:13	
Boron	mg/L	ND	0.10	0.0049	06/19/20 14:13	
Cadmium	mg/L	ND	0.0025	0.00011	06/19/20 14:13	
Chromium	mg/L	ND	0.010	0.00039	06/19/20 14:13	
Cobalt	mg/L	ND	0.0050	0.00030	06/19/20 14:13	
Lead	mg/L	ND	0.0050	0.000046	06/19/20 14:13	
Lithium	mg/L	ND	0.030	0.00078	06/19/20 14:13	
Molybdenum	mg/L	ND	0.010	0.00095	06/19/20 14:13	
Selenium	mg/L	ND	0.010	0.0013	06/19/20 14:13	
Thallium	mg/L	ND	0.0010	0.000052	06/19/20 14:13	

LABORATORY CONTROL SAMPLE: 2915984

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	106	80-120	
Arsenic	mg/L	0.1	0.10	103	80-120	
Barium	mg/L	0.1	0.11	107	80-120	
Beryllium	mg/L	0.1	0.11	106	80-120	
Boron	mg/L	1	1.1	106	80-120	
Cadmium	mg/L	0.1	0.10	105	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Lead	mg/L	0.1	0.11	105	80-120	
Lithium	mg/L	0.1	0.11	108	80-120	
Molybdenum	mg/L	0.1	0.11	107	80-120	
Selenium	mg/L	0.1	0.10	100	80-120	
Thallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2915985 2915986

Parameter	Units	92482102001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	102	101	75-125	1	20	
Arsenic	mg/L	0.0012J	0.1	0.1	0.10	0.10	103	101	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92482102

Parameter	Units	2915985		2915986		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Barium	mg/L	0.074	0.1	0.1	0.18	0.18	109	104	75-125	3	20		
Beryllium	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	2	20		
Boron	mg/L	1.2	1	1	2.2	2.2	97	98	75-125	1	20		
Cadmium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	3	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.099	101	99	75-125	2	20		
Cobalt	mg/L	0.0012J	0.1	0.1	0.10	0.098	99	97	75-125	2	20		
Lead	mg/L	ND	0.1	0.1	0.094	0.093	94	93	75-125	1	20		
Lithium	mg/L	0.028J	0.1	0.1	0.12	0.13	97	99	75-125	2	20		
Molybdenum	mg/L	0.035	0.1	0.1	0.14	0.14	107	102	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	4	20		
Thallium	mg/L	0.000080J	0.1	0.1	0.094	0.093	94	92	75-125	2	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

QC Batch: 548761 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482102003, 92482102004, 92482102005

METHOD BLANK: 2919221 Matrix: Water
Associated Lab Samples: 92482102003, 92482102004, 92482102005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	06/22/20 13:26	

LABORATORY CONTROL SAMPLE: 2919222

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919223 2919224

Parameter	Units	92482101024		2919223		2919224		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Mercury	mg/L	ND	0.0025	0.0025	0.0025	0.0024	100	95	75-125	5	20

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92482102

QC Batch: 547895	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482102003

METHOD BLANK: 2915268 Matrix: Water

Associated Lab Samples: 92482102003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/17/20 12:19	

LABORATORY CONTROL SAMPLE: 2915269

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	393	98	84-108	

SAMPLE DUPLICATE: 2915270

Parameter	Units	92481784002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	173	185	7	10	

SAMPLE DUPLICATE: 2915271

Parameter	Units	92482159003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	53.0	69.0	26	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92482102

QC Batch: 548159	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482102004

METHOD BLANK: 2916338 Matrix: Water

Associated Lab Samples: 92482102004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/18/20 10:55	

LABORATORY CONTROL SAMPLE: 2916339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	418	104	84-108	

SAMPLE DUPLICATE: 2916340

Parameter	Units	92482102004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	665	818	21	10 D6	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92482102

QC Batch: 551606	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482102005

METHOD BLANK: 2931825 Matrix: Water

Associated Lab Samples: 92482102005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	07/07/20 13:47	

LABORATORY CONTROL SAMPLE: 2931826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	404	101	84-108	

SAMPLE DUPLICATE: 2931827

Parameter	Units	92484566001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	596	568	5	10	

SAMPLE DUPLICATE: 2931958

Parameter	Units	92482102005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	508	509	0	10	1g,H1

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

QC Batch: 547886 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92482102003

METHOD BLANK: 2915194 Matrix: Water
Associated Lab Samples: 92482102003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/17/20 22:52	
Fluoride	mg/L	ND	0.10	0.050	06/17/20 22:52	
Sulfate	mg/L	ND	1.0	0.50	06/17/20 22:52	

LABORATORY CONTROL SAMPLE: 2915195

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.1	96	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	50	48.1	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2915196 2915197

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92479841001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	210	50	50	254	255	90	92	90-110	0	10		
Fluoride	mg/L	0.97	2.5	2.5	3.6	3.6	103	105	90-110	1	10		
Sulfate	mg/L	260	50	50	306	307	92	94	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2915198 2915199

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482012003 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	3.0	50	50	55.7	55.2	105	104	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	102	101	90-110	1	10		
Sulfate	mg/L	ND	50	50	52.9	52.4	105	104	90-110	1	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

QC Batch: 548965 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92482102004, 92482102005

METHOD BLANK: 2919910 Matrix: Water
Associated Lab Samples: 92482102004, 92482102005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/24/20 15:56	
Fluoride	mg/L	ND	0.10	0.050	06/24/20 15:56	
Sulfate	mg/L	ND	1.0	0.50	06/24/20 15:56	

LABORATORY CONTROL SAMPLE: 2919911

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.7	101	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	50	51.0	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919912 2919913

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482711001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	8.2	50	50	56.6	56.6	97	97	90-110	0	10		
Fluoride	mg/L	0.57	2.5	2.5	2.7	2.8	86	88	90-110	1	10	M1	
Sulfate	mg/L	13.6	50	50	62.3	62.3	98	97	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919914 2919915

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482268001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	14.5	50	50	62.7	63.0	96	97	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	104	107	90-110	3	10		
Sulfate	mg/L	ND	50	50	48.8	49.1	98	98	90-110	1	10		

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QUALIFIERS

Project: HAMMOND AP-3 NON ROUTINE

Pace Project No.: 92482102

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- | | |
|----|--|
| 1g | The laboratory did not meet the method required hold time for this analysis due to reanalysis. The reanalysis was initiated by the client due to incongruencies with historical data for this site in the initial reporting of TDS. The reanalysis confirmed historical results. |
| D6 | The precision between the sample and sample duplicate exceeded laboratory control limits. |
| H1 | Analysis conducted outside the EPA method holding time. |
| 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: HAMMOND AP-3 NON ROUTINE
Pace Project No.: 92482102

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482102004	HGWC-125				
92482102005	HGWC-126				
92482102003	FB-03	EPA 3010A	548325	EPA 6010D	548371
92482102004	HGWC-125	EPA 3010A	548325	EPA 6010D	548371
92482102005	HGWC-126	EPA 3010A	548325	EPA 6010D	548371
92482102003	FB-03	EPA 3005A	548037	EPA 6020B	548275
92482102004	HGWC-125	EPA 3005A	548037	EPA 6020B	548275
92482102005	HGWC-126	EPA 3005A	548037	EPA 6020B	548275
92482102003	FB-03	EPA 7470A	548761	EPA 7470A	548801
92482102004	HGWC-125	EPA 7470A	548761	EPA 7470A	548801
92482102005	HGWC-126	EPA 7470A	548761	EPA 7470A	548801
92482102003	FB-03	SM 2450C-2011	547895		
92482102004	HGWC-125	SM 2450C-2011	548159		
92482102005	HGWC-126	SM 2450C-2011	551606		
92482102003	FB-03	EPA 300.0 Rev 2.1 1993	547886		
92482102004	HGWC-125	EPA 300.0 Rev 2.1 1993	548965		
92482102005	HGWC-126	EPA 300.0 Rev 2.1 1993	548965		

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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 Facility Information	
Company: GA Power		Report to: SCS Contacts		Attention: Southern Co.	
Address: Atlanta, GA		Copy to: Geosyntec Contacts		Company Name:	
Email to: SCS Contacts		Purchase Order No.:		Address:	
Phone: / Fax: /		Project Name: Plant Hammond AP-3 Non-Routine		Facility Name: / Reference: /	
Requested Due Date/TAT: 5 DM		Project Number: GWS581		Facility Manager: Kevin Herring	
				Facility #:	
				Requested Analysis Filtered (Y/N)	
				REGULATORY AGENCY:	
				NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/>	
				UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>	
				Site Location STATE: GA	

ITEM #	Section B Requested Client Information	Section D VARD Matrix Codes MATRIX CODE CODE DATE/TIME DATE/TIME DATE/TIME DATE/TIME	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES	ANALYSIS TEST	RESIDUAL CHLORINE (Y/N)	
			DATE	TIME						
1	HGWC-126	WT G	6/16/20	10:50	19	5	2	3	X	Residual Chlorine (Y/N) Pace Project No./ Lab ID: 02462102
2	HGWC-125	WT G	6/16/20	10:50	19	5	2	3	X	
3	HGWC-126	WT G	6/16/20	12:16	19	5	2	3	X	
4	NW-41	WT G								
5	CR-08	WT G								
6										
7										
8										
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Individuals here (by signing this form) are accepting Face's NEI 20 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

FACE-0-020rev07, 15-Feb-2007

RELINQUISHED BY AFFILIATION:		DATE:		ACCEPTED BY AFFILIATION:		DATE:	
SHAWN LIA		6/16/20		SHAWN LIA		6/16/20	
REQUISITIONER NAME AND SIGNATURE:		DATE:		REQUISITIONER NAME AND SIGNATURE:		DATE:	
SHAWN LIA		6/16/20		SHAWN LIA		6/16/20	
SAMPLER NAME AND SIGNATURE:		DATE:		SAMPLER NAME AND SIGNATURE:		DATE:	
SHAWN LIA		6/16/20		SHAWN LIA		6/16/20	
PRINT NAME OF SAMPLER:		DATE SIGNED (RANDOMLY):		PRINT NAME OF SAMPLER:		DATE SIGNED (RANDOMLY):	
SHAWN LIA		6/16/20		SHAWN LIA		6/16/20	
SIGNATURE OF SAMPLER:		DATE SIGNED (RANDOMLY):		SIGNATURE OF SAMPLER:		DATE SIGNED (RANDOMLY):	
SHAWN LIA		6/16/20		SHAWN LIA		6/16/20	

Page: 1 of 1

July 09, 2020

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

RE: Project: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92484716

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between June 16, 2020 and June 17, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,



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

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-3 NON ROUTINE RADs
Pace Project No.: 92484716

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Florida: Cert E871149 SEKS WET
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: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92484716

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92484716001	FB-03	Water	06/15/20 16:45	06/16/20 14:17
92482100003	HGWC-125	Water	06/16/20 10:30	06/17/20 10:57
92482100004	HGWC-126	Water	06/16/20 12:16	06/17/20 10:57

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92484716

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92484716001	FB-03	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482100003	HGWC-125	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482100004	HGWC-126	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92484716

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92484716001	FB-03					
EPA 9315	Radium-226	0.0257 ± 0.101 (0.206) C:88% T:NA	pCi/L		06/25/20 20:24	
EPA 9320	Radium-228	-0.240 ± 0.408 (1.00) C:59% T:82%	pCi/L		07/06/20 16:01	
Total Radium Calculation	Total Radium	0.0257 ± 0.509 (1.21)	pCi/L		07/07/20 12:47	
92482100003	HGWC-125					
EPA 9315	Radium-226	0.556 ± 0.160 (0.169) C:93% T:NA	pCi/L		06/25/20 20:24	
EPA 9320	Radium-228	1.06 ± 0.580 (1.06) C:60% T:79%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.62 ± 0.740 (1.23)	pCi/L		07/07/20 12:47	
92482100004	HGWC-126					
EPA 9315	Radium-226	0.900 ± 0.232 (0.243) C:89% T:NA	pCi/L		06/25/20 20:24	
EPA 9320	Radium-228	0.918 ± 0.556 (1.04) C:58% T:83%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.82 ± 0.788 (1.28)	pCi/L		07/07/20 12:47	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92484716

Sample: FB-03 **Lab ID: 92484716001** Collected: 06/15/20 16:45 Received: 06/16/20 14:17 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • As per client request, report the results from 92482100002.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0257 ± 0.101 (0.206) C:88% T:NA	pCi/L	06/25/20 20:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.240 ± 0.408 (1.00) C:59% T:82%	pCi/L	07/06/20 16:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.0257 ± 0.509 (1.21)	pCi/L	07/07/20 12:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92484716

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-125 Lab ID: 92482100003 Collected: 06/16/20 10:30 Received: 06/17/20 10:57 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.556 ± 0.160 (0.169) C:93% T:NA	pCi/L	06/25/20 20:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.06 ± 0.580 (1.06) C:60% T:79%	pCi/L	07/06/20 16:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.62 ± 0.740 (1.23)	pCi/L	07/07/20 12:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92484716

Sample: HGWC-126 **Lab ID: 92482100004** Collected: 06/16/20 12:16 Received: 06/17/20 10:57 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.900 ± 0.232 (0.243) C:89% T:NA	pCi/L	06/25/20 20:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.918 ± 0.556 (1.04) C:58% T:83%	pCi/L	07/06/20 16:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.82 ± 0.788 (1.28)	pCi/L	07/07/20 12:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92484716

QC Batch: 402596

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92482100003, 92482100004, 92484716001

METHOD BLANK: 1948602

Matrix: Water

Associated Lab Samples: 92482100003, 92482100004, 92484716001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.856 ± 0.506 (0.940) C:63% T:80%	pCi/L	07/06/20 16:00	

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: HAMMOND AP-3 NON ROUTINE RADS

Pace Project No.: 92484716

QC Batch:	402098	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92482100003, 92482100004, 92484716001

METHOD BLANK: 1946552 Matrix: Water

Associated Lab Samples: 92482100003, 92482100004, 92484716001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0618 ± 0.0814 (0.155) C:86% T:NA	pCi/L	06/25/20 20:33	

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QUALIFIERS

Project: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92484716

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 NON ROUTINE RADS
Pace Project No.: 92484716

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482100003	HGWC-125	EPA 9315	402098		
92482100004	HGWC-126	EPA 9315	402098		
92484716001	FB-03	EPA 9315	402098		
92482100003	HGWC-125	EPA 9320	402596		
92482100004	HGWC-126	EPA 9320	402596		
92484716001	FB-03	EPA 9320	402596		
92482100003	HGWC-125	Total Radium Calculation	403995		
92482100004	HGWC-126	Total Radium Calculation	403995		
92484716001	FB-03	Total Radium Calculation	403995		

REPORT OF LABORATORY ANALYSIS

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Data Validation Reports

Memorandum

Date: October 8, 2019
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2622317, 2622318, 2622352, 2622353, 2622354, 2622355, 2622398, 2622399, 2622400, 2622401, 2622402 and 2622403**

SITE: Plant Hammond AP

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of fourteen aqueous samples and two equipment blanks, collected 21-23 August 2019, 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 Environmental Protection Agency (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

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, 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); and,
- 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);

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2622317001	HGWA-111
2622317002	HGWA-112
2622317003	HGWA-113
2622318001	HGWA-111
2622318002	HGWA-112
2622318003	HGWA-113
2622352001	HGWA-122
2622352002	HGWC-121A
2622352003	HGWC-120
2622353001	HGWA-122
2622353002	HGWC-121A
2622353003	HGWC-120
2622354001	HGWC-117
2622354002	HGWC-101
2622354003	HGWC-118
2622354004	HGWC-103

Laboratory ID	Client ID
2622354005	HGWC-105
2622355001	HGWC-117
2622355002	HGWC-101
2622355003	HGWC-118
2622355004	HGWC-103
2622355005	HGWC-105
2622398001	HGWC-124
2622399001	HGWC-124
2622400001	EB-01
2622400002	EB-02
2622401001	EB-01
2622401002	EB-02
2622402001	HGWC-107
2622402002	HGWC-109
2622402001	HGWC-107
2622402002	HGWC-109

The samples were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 2622317, 2622318, 2622352, 2622353, 2622354 and 2622355: The relinquishing signature, date and time were missing for the final sample transfer on the COCs.
- 2622354 and 2622355: The collection time of HGWC-103 was listed as 1430 on the label and 1450 on the COC. The sample was logged in per the COC.
- 2622354, 2622355, 2622402 and 2622403: The years were missing from the start and end collection times from some or all of the samples.

- 2622400 and 2622401: There were time discrepancies between the relinquished by and received by times. For the first sample transfer the relinquished by time was documented as 08/23/19 1530 and the received by time was documented as 08/23/19 1540. For the second sample transfer the relinquished by time was documented as 08/26/19 0815 and the received by time was documented as 08/26/19 1830.
- 2622402 and 2622403: There were time discrepancies between the relinquished by and received by times. For the second sample transfer the relinquished by time was documented as 08/23/19 1530 and the received by time was documented as 08/23/19 1540. For the third sample transfer the relinquished by time was documented as 08/26/19 0815 and the received by time was documented as 08/26/19 1830.

1.0 METALS

The samples were analyzed for metals 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). Three method blanks were reported (batches 34179, 34320 and 34496). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exceptions.

2622317: Antimony was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) in the method blank in batch 34179. Since antimony was not detected in the associated samples, no qualifications were applied to the data.

2622352 and 2622354: Chromium was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 34320. Therefore, the chromium concentrations in the associated samples less than five times the method blank concentration were U* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
HGWA-122	Chromium	0.00060	J	0.0006	U*	BL
HGWC-120	Chromium	0.00072	J	0.00072	U*	BL
HGWC-101	Chromium	0.00064	J	0.00064	U*	BL
HGWC-103	Chromium	0.00063	J	0.00063	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

* 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). 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.

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 specified acceptance criteria.

1.6 Equipment Blank

Two equipment blanks were collected with the sample set, EB-01 and EB-02. Metals were not detected in the equipment blanks above the MDLs.

1.7 Field Blank

A field blank was not collected with the sample set.

1.8 Field Duplicate

A field duplicate was not collected with the sample set.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated non-detect 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 B used in the level II reports were not included in the EDDs. In addition, there were project 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 34231, 34265 and 34391). 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 specified acceptance criteria.

2.6 Equipment Blank

Two equipment blanks were collected with the sample set, EB-01 and EB-02. Mercury was not detected in the equipment blanks above the MDL.

2.7 Field Blank

A field blank was not collected with the sample set.

2.8 Field Duplicate

A field duplicate was not collected with the sample set.

2.9 Sensitivity

The samples were reported to the MDL. No elevated non-detect 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 project 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 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
- ✓ Laboratory Duplicate
- ✓ 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 these analyses, for this dataset is 100%.

3.2 Holding Times

The holding time for the fluoride analysis 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). Three method blanks were reported (batches 34532, 34533 and 34680). 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). One sample set specific MS was reported using sample HGWC-107. The recovery result was within the laboratory specified acceptance criteria.

Two batch MSs and three 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.

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). Three LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

3.6 Laboratory Duplicate

Laboratory duplicates were not reported with the data.

3.7 Equipment Blank

Two equipment blanks were collected with the sample set, EB-01 and EB-02. Fluoride was not detected in the equipment blanks above the MDL.

3.8 Field Blank

A field blank was not collected with the sample set.

3.9 Field Duplicate

A field duplicate was not collected with the sample set.

3.10 Sensitivity

The samples were reported to the MDL. No elevated non-detect 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. There were project 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). Three method blanks were reported for the radium-228 data (batches 358895, 358894 and 359966). Three method blanks were reported for the radium-226 data (batches 359801, 359490 and 359964). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

2622318, 2622355 and 2622399: Radium-226 (0.563 pCi/L) was detected at a concentration greater than the MDC in the method blank in batch 359801. Therefore, the radium-226 concentration in the associated sample 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. Also, samples with a combined radium 226 + 228 concentration greater than the MDC with a radium-228 concentration less than the MDC and a U* qualified radium-226 concentration were U* qualified as not detected at the reported concentration.

2622353: Radium-228 (0.862 pCi/L) was detected at a concentration greater than the MDC in the method blank in batch 358894. Therefore, the radium-228 concentration in the associated sample greater than the MDC and with a NAD less than 2.58 was U* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-111	Radium-226	0.492	NA	0.492	U*	BL
HGWA-112	Radium-226	0.417	NA	0.417	U*	BL
HGWA-122	Radium-228	0.886	NA	0.886	U*	BL
HGWC-101	Radium-226	0.474	NA	0.474	U*	BL
HGWC-118	Radium-226	0.492	NA	0.492	U*	BL
HGWC-103	Radium-226	0.434	NA	0.434	U*	BL
HGWC-124	Radium-226	0.450	NA	0.450	U*	BL
HGWC-124	Combined Radium 226 + 228	0.834	NA	0.834	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). Two LCSs and one LCS/LCS duplicate (LCSD) pair were reported for radium-226. One LCS and two LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria.

4.6 Laboratory Duplicate

Four batch laboratory duplicates were reported for radium-226 and one batch laboratory duplicate was 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 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 blank above the MDCs, with the following exception.

Radium-226 (0.539 pCi/L) was detected at a concentration greater than the MDC in EB-02. Therefore, the radium-226 concentration in the associated sample greater than the MDC and with a NAD less than 2.58 was U* qualified as not detected at the reported concentration. Also, samples with combined radium 226 + 228 concentrations greater than the MDC with a radium-228 concentration less than the MDC and a U* qualified radium-226 concentration were U* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-111	Radium-226	0.492	NA	0.492	U*	BE
HGWA-112	Radium-226	0.417	NA	0.417	U*	BE
HGWC-121A	Radium-226	0.635	NA	0.635	U*	BE
HGWC-121A	Combined Radium 226 + 228	1.30	NA	1.30	U*	BE
HGWC-120	Radium-226	0.845	NA	0.845	U*	BE
HGWC-120	Combined Radium 226 + 228	1.35	NA	1.35	U*	BE
HGWC-101	Radium-226	0.474	NA	0.474	U*	BE
HGWC-118	Radium-226	0.492	NA	0.492	U*	BE
HGWC-103	Radium-226	0.434	NA	0.434	U*	BE
HGWC-124	Radium-226	0.450	NA	0.450	U*	BE
HGWC-124	Combined Radium 226 + 228	0.834	NA	0.834	U*	BE
HGWC-107	Radium-226	0.502	NA	0.502	U*	BE
HGWC-107	Combined Radium 226 + 228	1.69	NA	1.69	J	BE

pCi/L- picocuries per liter

NA-not applicable

4.9 **Field Blank**

A field blank was not collected with the sample set.

4.10 **Field Duplicate**

A field duplicate was not collected with the sample set.

4.11 **Sensitivity**

The samples were reported to the MDCs. No elevated non-detect 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

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

Reason Code	Explanation
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
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: 20 January 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2624782, 2624784, 2624785, 2624786, 2624787, 2624788, 2624791, 2624792, 2624799, 2624800, 2624802 and 2624803**

SITE: Plant Hammond AP3/4

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of fifteen aqueous samples, one field duplicate sample and one field blank, collected 21-23 October 2019, as part of the Plant Hammond AP3/4 on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B
- Mercury by USEPA Method 7470A
- Total Dissolved Solids (TDS) by Standard Method 2540C
- Chloride, Fluoride and Sulfate by USEPA Method 300.0

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by USEPA Method 9315
- Radium-228 by USEPA Method 9320
- Total Radium by Calculation

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data as qualified are usable for meeting project objectives. 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); and,
- 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).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2624782001	HGWA-122
2624782002	HGWC-124
2624782003	HGWC-121A
2624784001	HGWA-122
2624784002	HGWC-124
2624784003	HGWC-121A
2624785001	HGWC-120
2624785002	FD-01
2624786001	HGWC-120
2624786002	FD-01
2624787001	HGWA-111
2624788001	HGWA-111
2624791001	HGWC-101
2624791002	HGWC-102
2624791003	HGWC-105
2624791004	HGWC-103
2624792001	HGWC-101

Laboratory ID	Client ID
2624792002	HGWC-102
2624792003	HGWC-105
2624792004	HGWC-103
2624799001	HGWA-112
2624799002	HGWC-117
2624799003	HGWC-118
2624799004	HGWA-113
2624799005	HGWC-109
2624799006	HGWC-107
2624800001	HGWA-112
2624800002	HGWC-117
2624800003	HGWC-118
2624800004	HGWA-113
2624800005	HGWC-109
2624800006	HGWC-107
2624802001	FB-01
2624803001	FB-01

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:

- 2624785 and 2624786: There was no time of collection listed for the field duplicate, FD-01. The laboratory assigned the collection time of 00:00. Also, the year was not documented for the relinquished by and received by times for the second transfer.
- 2624787 and 2624788: The year was not documented for the sample collection time and relinquished by time for the sample transfer.

- 2624791, 2624792, 2624799 and 2624800: The year was not documented for the sample collection times for samples HGWC-101, HGWC-102, HGWA-112, HGWC-117 and HGWC-118 and the relinquished by and received by times for the sample transfers.
- 2624802 and 2624803: The year was not documented for the received by time for the first transfer and the relinquished by and received by times for the second transfer.

1.0 METALS

The samples were analyzed for metals by USEPA methods 3005A/6020B. (Mercury was 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 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 37696 and 38024). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

2624786, 2624792, 2624800 and 2624803: Boron (0.0059 mg/L) was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) in the method blank in batch 38024. Therefore, the boron 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**
HGWA-112	Boron	0.016	J B	0.016	U*	BL
HGWA-113	Boron	0.010	J B	0.010	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag indicating 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). Two 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.

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 specified acceptance criteria.

1.6 Equipment Blank

An equipment blank was not collected with the sample set.

1.7 Field Blank

One field blank was collected with the sample sets, FB-01. Metals were not detected in the field blank above the MDLs, with the following exception.

Calcium (0.011 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in FB-01. Since calcium was detected in the associated samples at concentrations greater than five times the field blank concentration, no qualifications were applied to the data.

1.8 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-01. Acceptable precision [relative percent difference (RPD) \leq 20% or the difference between the concentrations $<$ RL] was demonstrated between the field duplicate and the original sample HGWC-120.

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 B 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 by USEPA 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 the dataset is 100%.

2.2 Holding Time

The holding time for the 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 37720). 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 specified acceptance criteria.

2.6 Equipment Blank

An equipment blank was not collected with the sample set.

2.7 Field Blank

One field blank was collected with the sample sets, FB-01. Mercury was not detected in the field blank above the MDL.

2.8 Field Duplicate

The field duplicate was not analyzed for mercury.

2.9 Sensitivity

The samples were reported to the MDL. Elevated nondetect results were not 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 TDS by Standard Method 2540C and chloride, fluoride and sulfate by USEPA 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
- ✓ 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 this analysis, for the dataset is 100%.

3.2 Holding Times

The holding times for the analysis of a water sample for the wet chemistry parameters are listed below. The holding times were met for the sample analyses.

Analyte	Holding Time
TDS	7 days from collection to analysis
Chloride, Fluoride and Sulfate	28 days from collection to analysis

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). Three method blanks were reported for the anions (batches 37730, 37858 and 37870). The wet chemistry parameters were not detected in the method blanks above the MDLs, with the following exceptions.

2624784 and 2624787: Chloride (0.034 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 37730. Since chloride was detected in the associated samples at concentrations greater than five times the method blank concentration, no qualifications were applied to the data.

2624786: Chloride (0.0032 mg/L) and sulfate (0.36 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in the method blank in batch 37858. Since chloride and sulfate were detected in the associated samples at concentrations greater than five times the method blank concentrations, no qualifications were applied to the data.

3.4 Matrix Spike/Matrix Spike Duplicate

One sample set MS/MSD pair using sample FD-01 and one MS using sample HGWC-109 were reported for the anions. The RPD and recovery results were within the laboratory specified acceptance criteria, with the following exception.

2624800: The recovery of sulfate in the MS using sample HGWC-109 was low and outside the laboratory specified acceptance criteria. Therefore, the chloride concentration in sample HGWC-109 was J qualified as estimated.

One batch MS and two 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
HGWC-109	Sulfate	23.2	M1	23.2	J	M-

mg/L- milligram per liter

M1-laboratory flag indicating MS recovery exceeded the QC limits

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 specified acceptance criteria.

3.6 Laboratory Duplicate

Four sample set specific laboratory duplicates were reported for TDS using samples HGWA-122, HGWC-120, HGWA-113 and HGWC-109. The RPD results were within the laboratory specified acceptance criteria.

Two 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

An equipment blank was not collected with the sample set.

3.8 Field Blank

One field blank was collected with the sample sets, FB-01. The wet chemistry parameters were not detected in the field blank above the MDLs.

3.9 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-01. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample HGWC-120.

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 flag M1 used in the level II report was 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 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). Two method blanks were reported for the radium-228 data (batches 369306 and 369311). Two method blanks were reported for the radium-226 data (batches 369307 and 369310). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exception.

2624785, 2624791 and 2624799: Radium-226 was detected at concentrations greater than the MDC in the method blank in batch 369310. Therefore, the radium-226 concentrations in the associated samples less than five times the method blank concentrations were U* qualified as not detected.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-120	Radium-226	0.760	NA	0.760	U*	BL
FD-01	Radium-226	0.420	NA	0.420	U*	BL
HGWC-103	Radium-226	0.571	NA	0.571	U*	BL
HGWC-118	Radium-226	0.424	NA	0.424	U*	BL
HGWA-113	Radium-226	0.401	NA	0.401	U*	BL
HGWC-109	Radium-226	0.545	NA	0.545	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). Two LCS/LCS duplicate (LCSD) pairs were reported for radium-226. Two LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria.

4.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for radium-226 using sample BGWC-19. The RER (2σ) result was within the laboratory 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 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 specified acceptance criteria.

4.8 Equipment Blank

An equipment blank was not collected with the sample set.

4.9 Field Blank

One field blank was collected with the sample sets, FB-01. Radium-226 and radium-228 were not detected in the field blank above the MDCs.

4.10 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-01. Acceptable precision ($RER(2\sigma) < 3$) was demonstrated between the field duplicates and the original samples BGWA-29, HGWC-120.

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**

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.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Reason Code	Explanation
13	Other
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
H	Holding time exceedance.
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: 7 July 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverable – Pace Analytical Services, LLC Project Number 2627482**

SITE: Plant Hammond AP3

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of one aqueous sample, one field blank and one equipment blank, collected 3 January 2020, as part of the Plant Hammond AP3 on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Calcium by United States (US) Environmental Protection Agency (EPA) Methods 3010A/6010D
- Boron and Molybdenum by USEPA Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C
- Chloride, Fluoride and Sulfate by USEPA Method 300.0

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data are usable for meeting project objectives.

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); and,
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2627482001	MW-32
2627482002	FB-01

Laboratory ID	Client ID
2627482003	EB-01

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) form:

- The year was not documented for the sample collection dates.
- There was a time discrepancy for the first sample transfer. The relinquished by time was documented as 1/6/2020 1120 and the received by time was documented as 1/6/20 1122.

1.0 METALS

The samples were analyzed for calcium by USEPA methods 3010A/6010D and boron and molybdenum by USEPA methods 3005A/6020B.

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 this package 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 analysis, for the 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 41627 and 41623). 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). Two 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.

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 specified acceptance criteria.

1.6 Equipment Blank

One equipment blank was collected with the sample set, EB-01. Metals were not detected in the equipment blank above the MDLs.

1.7 Field Blank

One field blank was collected with the sample set, FB-01. Metals were not detected in the field blank above the MDLs.

1.8 Field Duplicate

Field duplicates were not collected with the sample set.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD 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 report and the EDD.

2.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard Method 2540C and chloride, fluoride and sulfate by USEPA 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
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

2.1 Overall Assessment

The wet chemistry data reported in this package 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 analysis, for the dataset is 100%.

2.2 Holding Times

The holding times for the analysis of a water sample for the wet chemistry parameters are listed below. The holding times were met for the sample analyses.

Analyte	Holding Time
TDS	7 days from collection to analysis
Chloride, Fluoride and Sulfate	28 days from collection to analysis

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). Two method blanks were reported for the anions (batches 519174 and 519389). The wet chemistry parameters were not detected in the method blanks above the MDLs.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set MS/MSD pair was reported for the anions using sample MW-32. The relative percent difference (RPD) and recovery results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of sulfate in the MS/MSD pair were high and outside the laboratory specified acceptance criteria. Since the concentration of sulfate in sample MW-32 was greater than four times the spiked concentration, no qualifications were applied to the data.

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.

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). LCSs were reported for each analysis and batch as appropriate. The recovery results were within the laboratory specified acceptance criteria.

2.6 Laboratory Duplicate

Two 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.

2.7 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 (20.0 mg/L) was detected in EB-01 at a concentration greater than the RL. Since TDS was detected in the associated sample at a concentration greater than ten times the TDS concentration, no qualifications were applied to the data.

2.8 Field Blank

One field blank was collected with the sample sets, FB-01. The wet chemistry parameters were not detected in the field blank above the MDLs.

2.9 Field Duplicate

Field duplicates were not collected with the sample set.

2.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

2.11 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The laboratory flag M1 used in the level II report was not included in the EDD. No other discrepancies were identified between the level II report and the EDD.

* * * * *

ATTACHMENT 1
ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: 8 July 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverable – Pace Analytical Services, LLC Project Number 2628191**

SITE: Plant Hammond AP3

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of one aqueous sample, one field blank and one equipment blank, collected 22 January 2020, as part of the Plant Hammond AP3 on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical test:

- Molybdenum by USEPA Methods 3005A/6020B

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data are usable for meeting project objectives.

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); and,
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2628191001	MW-32
2628191002	EB-01

Laboratory ID	Client ID
2628191003	FB-01

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:

- The year was not documented for the sample collection dates.
- There was a time discrepancy for the second sample transfer. The relinquished by time was documented as 1/23/2020 1212 and the received by time was documented as 1/23/20 1215.

1.0 MOLYBDENUM

The samples were analyzed for molybdenum by USEPA methods 3005A/6020B.

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 molybdenum data reported in this package 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 analysis, for the dataset is 100%.

1.2 Holding Time

The holding time for the molybdenum 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). One method blank was reported (batch 42642). Molybdenum was not detected in the method blank above the method detection limit (MDL).

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 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.

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). One LCS was reported. The recovery result was within the laboratory specified acceptance criteria.

1.6 Equipment Blank

One equipment blank was collected with the sample set, EB-01. Molybdenum was not detected in the equipment blank above the MDL.

1.7 Field Blank

One field blank was collected with the sample set, FB-01. Molybdenum was not detected in the field blank above the MDL.

1.8 Field Duplicate

Field duplicates were not collected with the sample set.

1.9 Sensitivity

The samples were reported to the MDL. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD 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 report and the EDD.

* * * * *

ATTACHMENT 1
ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: 6 July 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverable – Pace Analytical Services, LLC Project Number 2631333**

SITE: Plant Hammond AP3

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of one aqueous sample, collected 24 April 2020, as part of the Plant Hammond AP3 on-site sampling event.

The sample was analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical test:

- Molybdenum by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data are usable for meeting project objectives.

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); and,
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001).

The following sample was analyzed and reported in the laboratory report:

Laboratory ID	Client ID
2631333001	MW-39

The sample was received within 0-6°C. No sample preservation issues were noted by the laboratory.

The year was not documented on the chain of custody (COC) for the sample collection date.

The field pH data included with the report was not validated.

1.0 MOLYBDENUM

The sample was analyzed for molybdenum by USEPA methods 3005A/6020B.

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 molybdenum data reported in this package 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 analysis, for the dataset is 100%.

1.2 Holding Time

The holding time for the molybdenum 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). One method blank was reported (batch 46010). Molybdenum was not detected in the method blank above the method detection limit (MDL).

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 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.

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). One LCS was reported. The recovery result was within the laboratory specified acceptance criteria.

1.6 Equipment Blank

Equipment blanks were not collected with the sample set.

1.7 Field Blank

Field blanks were not collected with the sample set.

1.8 Field Duplicate

Field duplicates were not collected with the sample set.

1.9 Sensitivity

The sample was reported to the MDL. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD 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 report and the EDD.

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Plant Hammond AP3 Data Validation

6 July 2020

Page 4

ATTACHMENT 1
ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: 8 July 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2630417, 30356483 and 92471272**

SITE: Plant Hammond AP3

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of six aqueous samples, one field duplicate sample and one field blank, collected 24-25 and 27 March 2020, as part of the Plant Hammond AP3 on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Calcium by United States (US) Environmental Protection Agency (EPA) Methods 3010A/6010D
- Metals by USEPA Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services, LLC, Asheville, North Carolina, for the following analytical tests:

- Calcium by USEPA Methods 3010A/6010D
- Boron, Lithium and Molybdenum by USEPA Methods 3010A/6020B
- TDS by Standard Method 2540C
- Chloride, Fluoride and Sulfate by USEPA Method 300.0

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by USEPA Method 9315
- Radium-228 by USEPA Method 9320
- Total Radium by Calculation

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data as qualified are usable for meeting project objectives. 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); and,
- 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).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2630417001	HGWA-122
2630417002	HGWC-124
2630417003	HGWC-120
2630417004	FD-03

Laboratory ID	Client ID
2630417005	HGWC-121A
2630417006	MW-32
2630417007	FB-03
92471272001	MW-39

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:

- 2630417: There was a time discrepancy for the fourth sample transfer on page one of the COC. The relinquished by time was documented as 3/25/20 0940 and the received by time was documented as 3/25/20 941.
- 30356483: The relinquished by signature, date and time were not documented on the COC.

The field pH data included with the report was not validated.

1.0 METALS

The samples were analyzed for calcium by USEPA methods 3010A/6010D and metals by USEPA methods 3005A/6020B.

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 analysis, for the 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). Six method blanks were reported (batches 45067, 45121, 45065, 45113, 533116 and 533117). 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). Three sample set specific MS/MSD pairs were reported, one using sample HGWA-122 and two using sample MW-39. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

2630417: The recoveries of calcium in the MS/MSD pair using sample HGWA-122 were low and outside the laboratory specified acceptance criteria. Since the calcium concentration in sample HGWA-122 was greater than four times the spiked concentration, no qualifications were applied to the data.

2630417: The recoveries of calcium in the MS/MSD pair using sample MW-39 were high and outside the laboratory specified acceptance criteria. Since the calcium concentration in sample MW-39 was greater than four times the spiked concentration, no qualifications were applied to the data.

2630417: The recovery of boron in the MSD using sample MW-39 was high and outside the laboratory specified acceptance criteria. Since the boron concentration in sample MW-39 was greater than four times the spiked concentration, no qualifications were applied to the data.

Three 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.

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). Six LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

1.6 Equipment Blank

Equipment blanks were not collected with the sample set.

1.7 Field Blank

One field blank was collected with the sample sets, FB-03. Metals were not detected in the field blank above the MDLs, with the following exceptions.

2630417: Calcium (171 mg/L) was detected in FB-03 at a concentration greater than the RL and boron was detected in FB-03 at an estimated concentration greater than the MDL and less than the RL. Since boron was detected above the RL in the associated samples, no qualifications were applied to the boron data. However, the calcium concentrations in the associated samples greater than the RL and less than the field blank concentration 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**
HGWA-122	Calcium	81.2	NA	81.2	U	3

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
HGWC-124	Calcium	104	NA	104	U	3
HGWC-120	Calcium	170	NA	170	U	3
HGWC-121A	Calcium	139	NA	139	U	3
MW-32	Calcium	170	NA	170	U	3

mg/L-milligrams per liter

NA-not applicable

* 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

1.8 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-03. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample HGWC-120, with the following exception.

2630417: Calcium was detected at a concentration greater than the RL in HGWC-120 and was not detected in FD-03, resulting in a noncalculable RPD. Since the calcium concentration in HGWC-120 was U qualified due to equipment blank contamination and based on professional and technical judgment, no additional qualifications were applied to the data.

Sample	ANALYTE	Laboratory Result (mg/L)	Laboratory Flag	RPD
HGWC-120	Calcium	170	NA	NC*
FD-03	Calcium	0.14	U	

mg/L-milligrams per liter

U-not detected at or above the MDL

NA-not applicable

NC-not calculable

*no qualifications see explanation above

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, D3 and M6 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 WET CHEMISTRY

The samples were analyzed for TDS by Standard Method 2540C and chloride, fluoride and sulfate by USEPA 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
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

2.1 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 analysis, for the dataset is 100%.

2.2 Holding Times

The holding times for the analysis of a water sample for the wet chemistry parameters are listed below. The holding times were met for the sample analyses.

Analyte	Holding Time
TDS	7 days from collection to analysis
Chloride, Fluoride and Sulfate	28 days from collection to analysis

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 for the anions (batches 533753, 533972 and 533105) and one method blank was reported for TDS (batch 533120). The wet chemistry parameters were not detected in the method blanks above the MDLs.

2.4 Matrix Spike/Matrix Spike Duplicate

Two sample set MS/MSD pairs were reported for the anions using samples HGWA-122 and MW-39. The RPD and recovery results were within the laboratory specified acceptance criteria, with the following exceptions.

92471272: The recoveries of sulfate in the MS/MSD pair using sample MW-39 were high and outside the laboratory specified acceptance criteria. Therefore, the sulfate concentration in sample MW-39 was J+ qualified as estimated with high bias.

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
MW-39	Sulfate	111	M1	111	J+	4

mg/L- milligram per liter

M1-laboratory flag indicating MS recovery exceeded the QC limits

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). LCSs or LCS/LCSD pairs were reported for each analysis and batch as appropriate. The recovery and RPD results were within the laboratory specified acceptance criteria.

2.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported for TDS using samples HGWA-122 and HGWC-121A. The RPD results were within the laboratory specified acceptance criteria.

Two 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.

2.7 Equipment Blank

Equipment blanks were not collected with the sample set.

2.8 Field Blank

One field blank was collected with the sample sets, FB-03.

2630417: TDS (675 mg/L), chloride (2.4 mg/L), fluoride (0.43 mg/L) and sulfate (232 mg/L) were detected in FB-03 at concentrations greater than the RLs. Therefore, based on professional and technical judgment the TDS, chloride, fluoride and sulfate concentrations in the associated samples less than or equal to the FB-03 concentrations were U qualified as not detected at the reported concentrations, the estimated fluoride concentration in the associated sample was U qualified as not detected at the RL and the chloride concentrations in samples HGWA-122, HGWC-124 and HGWC-121A were J+ qualified as estimated with high biases.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWA-122	Chloride	4.5	NA	4.5	J+	3
HGWA-122	Fluoride	0.085	J	0.3	U	3
HGWA-122	Sulfate	25.9	NA	25.9	U	3
HGWA-122	TDS	278	NA	278	U	3
HGWC-124	Chloride	2.7	NA	2.7	J+	3
HGWC-124	Sulfate	74.6	NA	74.6	U	3
HGWC-124	TDS	355	NA	355	U	3
HGWC-120	Chloride	2.4	NA	2.4	U	3
HGWC-120	Fluoride	0.43	NA	0.43	U	3
HGWC-120	Sulfate	226	NA	226	U	3
HGWC-120	TDS	665	NA	665	U	3
FD-03	TDS	12.0	NA	12.0	U	3
HGWC-121A	Chloride	16.3	NA	16.3	J+	3
HGWC-121A	Fluoride	0.095	J	0.30	U	3
HGWC-121A	Sulfate	116	NA	116	U	3
HGWC-121A	TDS	521	NA	521	U	3
MW-32	Chloride	2.2	NA	2.2	U	3
MW-32	Fluoride	0.34	NA	0.34	U	3
MW-32	Sulfate	204	NA	204	U	3
MW-32	TDS	641	NA	641	U	3

mg/L-milligrams per liter

J-estimated concentration greater than the MDL and less than the RL

NA-not applicable

2.9 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-03. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample HGWC-120, with the following exceptions.

2630417: The RPD of TDS was greater than 20%. Since the TDS concentrations in the field duplicate pair were U qualified due to equipment blank contamination and based on professional and technical judgment, no additional qualifications were applied to the data.

2630417: Chloride, fluoride and sulfate were detected at concentrations greater than the RLs in HGWC-120 and were not detected in FD-03, resulting in noncalculable RPDs. Since the chloride, fluoride and sulfate concentrations in HGWC-120 were U qualified due to equipment blank contamination and based on professional and technical judgment, no additional qualifications were applied to the data.

2.10 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

2.11 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 flag M1 used in the level II report was not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

3.0 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

3.1 **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%.

3.2 **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.

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 radium-228 data (batches 390462 and 390595). Two method blanks were reported for the radium-226 data (batches 390592 and 390461). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

30356483: Radium-228 was detected in the method blank in batch 390462 (0.720 pCi/L) at a concentration greater than the MDC. Since radium-228 was not detected in the associated samples at concentrations greater than the MDCs, no qualifications were applied to the data.

30356483: Radium-226 was detected in the method blanks in batches 390592 (0.444 pCi/L) and 390461 (0.480 pCi/L) at concentrations greater than the MDCs. Therefore, the radium-226 concentration less than the associated method blank concentration was U qualified as not detected at the reported concentration and the radium-226 concentrations in samples HGWC-120, HGWC-121A, MW-32 and FB-03 were J+ qualified as estimated with high biases. In addition, the combined radium 226 + 228 concentrations in samples MW-32 and FB-03 were J+ qualified as estimated with high biases.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-120	Radium-226	0.696	NA	0.696	J+	3
FD-03	Radium-226	0.376	NA	0.376	U	3
HGWC-121A	Radium-226	0.505	NA	0.505	J+	3
MW-32	Radium-226	0.714	NA	0.714	J+	3
MW-32	Combined Radium 226 + 228	1.51	NA	1.51	J+	3
FB-03	Radium-226	0.533	NA	0.533	J+	3
FB-03	Combined Radium 226 + 228	1.52	NA	1.52	J+	3

pCi/L-picocuries per liter

NA-not applicable

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with 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). One LCS and one LCS/LCS duplicate (LCSD) pair were reported for radium-226. Two LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria.

3.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported for radium-226 using samples HGWA-122 and HGWC-120. The RER (2σ) results were within the laboratory specified acceptance criteria.

3.7 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 specified acceptance criteria.

3.8 Equipment Blank

Equipment blanks were not collected with the sample set.

3.9 Field Blank

One field blank was collected with the sample sets, FB-03.

Radium-226 (0.533 pCi/L) and radium-228 (0.991 pCi/L) were detected in FB-03 at concentrations greater than the MDCs. Therefore, the radium-226 and radium-228 concentrations less than the field blank concentrations were U qualified as not detected at the reported concentrations and the radium-226 concentrations in samples HGWC-120 and MW-32 were J+ qualified as estimated with high biases. In addition, the combined radium 226 + 228 concentration in samples MW-32 was J+ qualified as estimated with high bias.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-120	Radium-226	0.696	NA	0.696	J+	3
FD-03	Radium-226	0.376	NA	0.376	U	3
HGWC-121A	Radium-226	0.505	NA	0.505	U	3
MW-32	Radium-226	0.714	NA	0.714	J+	3
MW-32	Radium-228	0.796	NA	0.796	U	3
MW-32	Combined Radium 226 + 228	1.51	NA	1.51	J+	3

pCi/L-picocuries per liter

NA-not applicable

3.10 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-03. Acceptable precision (RER (2σ) < 3) was demonstrated between the field duplicate and the original sample HGWC-120, HGWC-120.

3.11 Sensitivity

The samples were reported to the MDCs. Elevated nondetect results were not reported.

3.12 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: 6 July 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2632217 and 30365325**

SITE: Plant Hammond AP3

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of two aqueous samples, collected 22 May 2020, as part of the Plant Hammond AP3 on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Calcium by United States (US) Environmental Protection Agency (EPA) Methods 3010A/6010D
- Metals by USEPA Methods 3005A/6020B
- Mercury by USEPA Method 7470A
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services, LLC, Asheville, North Carolina, for the following analytical test:

- Chloride, Fluoride and Sulfate by USEPA Method 300.0

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by USEPA Method 9315
- Radium-228 by USEPA Method 9320
- Total Radium by Calculation
-

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data are usable for meeting project objectives.

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); and,
- 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).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2632217001	HGWC-125

Laboratory ID	Client ID
2632217002	HGWC-126

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The field pH data included with the report was not validated.

1.0 METALS

The samples were analyzed for calcium by USEPA methods 3010A/6010D and metals by USEPA methods 3005A/6020B. (Mercury was 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 analysis, for the 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 46705 and 46681). 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). Two 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.

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 specified acceptance criteria.

1.6 Equipment Blank

Equipment blanks were not collected with the sample set.

1.7 Field Blank

Field blanks were not collected with the sample set.

1.8 Field Duplicate

Field duplicates were not collected with the sample set.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD 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 report and the EDD.

2.0 MERCURY

The samples were analyzed for mercury by USEPA 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 analysis, for the dataset is 100%.

2.2 Holding Time

The holding time for the 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 46727). 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 sample set specific MS/MSD pair was reported, one using sample HGWC-126. The recovery and relative percent difference (RPD) results were within the laboratory 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). One LCS was reported. The recovery result was within the laboratory specified acceptance criteria.

2.6 Equipment Blank

Equipment blanks were not collected with the sample set.

2.7 Field Blank

Field blanks were not collected with the sample set.

2.8 Field Duplicate

Field duplicates were not collected with the sample set.

2.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

2.10 Electronic Data Deliverable Review

The results and sample IDs in the EDD 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 report and the EDD.

3.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard Method 2540C and chloride, fluoride and sulfate by USEPA 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
- ✓ 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 analysis, for the dataset is 100%.

3.2 Holding Times

The holding times for the analysis of a water sample for the wet chemistry parameters are listed below. The holding times were met for the sample analyses.

Analyte	Holding Time
TDS	7 days from collection to analysis
Chloride, Fluoride and Sulfate	28 days from collection to analysis

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). One method blank was reported for the anions (batch 543830). The anions were not detected in the method blank above the MDLs.

3.4 Matrix Spike/Matrix Spike Duplicate

One sample set MS/MSD pair was reported for the anions using sample HGWC-125. The RPD and recovery results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of sulfate in the MS/MSD pair were low and outside the laboratory specified acceptance criteria. Since the sulfate concentration in sample HGWC-125 was greater than four times the spiked concentration, no qualifications were applied to the data.

One batch MS/MSD pair was 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.

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 specified acceptance criteria.

3.6 Laboratory Duplicate

Two batch laboratory duplicates were 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

Equipment blanks were not collected with the sample set.

3.8 Field Blank

Field blanks were not collected with the sample set.

3.9 Field Duplicate

Field duplicates were not collected with the sample set.

3.10 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not 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 flag M6 used in the level II report was 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 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). One method blank was reported for the radium-228 data (batch 399001). One method blank was reported for the radium-226 data (batches 398939). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs).

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). One LCS/LCS duplicate (LCSD) pair was reported for radium-226. One LCS was reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria.

4.6 Laboratory Duplicate

Laboratory duplicates were not reported with 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 specified acceptance criteria.

4.8 Equipment Blank

Equipment blanks were not collected with the sample set.

4.9 Field Blank

Field blanks were not collected with the sample set.

4.10 **Field Duplicate**

Field duplicates were not collected with the sample set.

4.11 **Sensitivity**

The samples were reported to the MDCs. Elevated nondetect results were not reported.

4.12 **Electronic Data Deliverable Review**

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

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ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Field Data Sheets

Product Name: Low-Flow System

Date: 2019-08-22 10:48:03

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 613229
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 HGWA-122
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.42 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 3.75 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	10:08:43	300.06	21.37	6.48	414.22	0.38	15.44	5.68	92.97
Last 5	10:13:43	600.01	21.28	6.51	418.78	0.29	15.44	5.38	84.64
Last 5	10:18:43	899.99	21.29	6.51	424.67	0.25	15.44	5.10	79.25
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.09	0.03	4.56			-0.30	-8.33
Variance 2			0.01	0.00	5.89			-0.28	-5.39

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 27.76 ft.

Grab Samples

HGWA-122
Grab

Product Name: Low-Flow System

Date: 2019-08-22 16:07:52

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 613229
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-120
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 40.96 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	15:01:13	1199.99	21.96	6.83	946.74	0.49	40.96	1.13	-4.55
Last 5	15:06:13	1499.98	22.53	6.82	948.05	0.63	40.96	0.92	-4.46
Last 5	15:11:13	1799.97	23.29	6.80	949.53	0.24	40.96	0.77	-4.50
Last 5	15:16:13	2099.96	23.34	6.80	943.75	0.32	40.96	0.65	-3.64
Last 5	15:21:13	2399.95	23.54	6.79	941.95	0.25	40.96	0.54	-3.17
Variance 0			0.76	-0.02	1.49			-0.15	-0.04
Variance 1			0.05	-0.00	-5.78			-0.12	0.86
Variance 2			0.20	-0.01	-1.81			-0.11	0.46

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 61.56 ft.

Grab Samples

HGWC-120
Grab

Product Name: Low-Flow System

Date: 2019-08-22 13:12:04

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 613229
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-121A
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 18.46 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 7.25 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	12:19:53	600.04	22.54	6.77	1140.80	0.97	18.53	1.14	10.55
Last 5	12:24:53	900.00	22.35	6.77	1140.10	0.72	18.53	0.99	14.66
Last 5	12:29:53	1199.99	22.38	6.77	1144.02	0.45	18.53	0.87	15.30
Last 5	12:34:53	1499.98	22.59	6.77	1146.89	0.36	18.53	0.83	17.09
Last 5	12:39:53	1799.97	21.96	6.77	1138.39	0.35	18.53	0.82	19.07
Variance 0			0.03	-0.01	3.92			-0.12	0.64
Variance 1			0.21	-0.00	2.87			-0.04	1.79
Variance 2			-0.63	0.00	-8.50			-0.02	1.99

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 41.41 ft.

Grab Samples

HGWC-121A
Grab

Product Name: Low-Flow System

Date: 2019-08-23 10:47:25

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 613229
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-124
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 17.42 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 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	09:48:11	1499.98	20.52	7.05	572.23	0.36	17.87	2.19	53.32
Last 5	09:53:11	1799.97	20.57	7.04	574.59	0.47	17.87	1.50	50.98
Last 5	09:58:11	2099.96	20.04	7.04	580.56	0.50	17.86	2.70	49.68
Last 5	10:03:12	2400.95	20.30	7.04	576.90	0.35	17.86	2.62	46.62
Last 5	10:08:12	2700.94	20.62	7.02	578.83	0.32	17.85	2.49	45.48
Variance 0			-0.54	-0.00	5.96			1.20	-1.30
Variance 1			0.27	0.00	-3.65			-0.07	-3.05
Variance 2			0.32	-0.02	1.92			-0.13	-1.14

Notes

Four bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. IV metals (EPA 6020B/7470A). Total depth = 35.28 ft.

Grab Samples

HGWC-124
Grab

Product Name: Low-Flow System

Date: 2019-10-21 11:58:50

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 23.52 ft

Pump placement from TOC 23.52 ft

Well Information:

Well ID HGWA-122
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 0.5899797 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	11:11:45	1199.89	19.83	6.65	462.32	10.57	16.96	0.43	-124.48
Last 5	11:16:45	1499.89	19.95	6.66	464.74	5.33	16.96	0.40	-124.36
Last 5	11:21:45	1799.88	19.89	6.67	466.85	4.59	16.96	0.40	-124.30
Last 5	11:26:45	2099.87	20.07	6.68	467.28	3.47	16.96	0.41	-124.82
Last 5	11:31:45	2399.86	19.98	6.69	467.77	2.49	16.96	0.41	-124.68
Variance 0			-0.06	0.01	2.11			0.00	0.06
Variance 1			0.18	0.01	0.43			0.00	-0.52
Variance 2			-0.09	0.01	0.49			0.00	0.14

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EP A 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 27.78'

Grab Samples

HGWA-122
Grab

Product Name: Low-Flow System

Date: 2019-10-22 08:49:38

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 62.55 ft

Pump placement from TOC 62.55 ft

Well Information:

Well ID HGWC-120
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 41.65 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.7641872 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	07:57:31	300.08	18.49	6.83	960.89	3.25	41.65	1.33	-153.03
Last 5	08:02:31	600.01	18.24	6.76	966.79	4.98	41.65	0.50	-151.47
Last 5	08:07:31	900.00	18.11	6.75	966.59	2.83	41.65	0.30	-152.17
Last 5	08:12:31	1199.99	18.12	6.74	962.97	2.34	41.65	0.22	-152.92
Last 5	08:17:31	1499.98	18.04	6.74	962.03	1.59	41.65	0.18	-153.62
Variance 0			-0.13	-0.01	-0.20			-0.20	-0.70
Variance 1			0.01	-0.00	-3.63			-0.08	-0.75
Variance 2			-0.08	-0.00	-0.94			-0.04	-0.70

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 61.58'

Grab Samples

HGWC-120
Grab

Product Name: Low-Flow System

Date: 2019-10-21 16:51:12

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 33.16 ft

Pump placement from TOC 33.16 ft

Well Information:

Well ID HGWC-121A
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 19.33 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6330071 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	16:19:33	300.02	20.12	6.76	1091.30	3.69	19.39	0.43	-134.49
Last 5	16:24:33	600.00	19.92	6.75	1094.87	2.62	19.39	0.41	-135.63
Last 5	16:29:33	900.00	19.83	6.74	1099.44	2.18	19.39	0.37	-136.43
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.20	-0.01	3.57			-0.02	-1.14
Variance 2			-0.09	-0.01	4.57			-0.04	-0.80

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 41.45'

Grab Samples

HGWC-121A
Grab

Product Name: Low-Flow System

Date: 2019-10-21 13:42:22

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 30.52 ft

Pump placement from TOC 30.52 ft

Well Information:

Well ID HGWC-124
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 17.93 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6212237 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	12:53:37	1199.99	19.31	7.08	566.67	8.97	18.34	0.29	-123.91
Last 5	12:58:37	1499.98	19.36	7.08	567.97	6.48	18.34	0.24	-123.51
Last 5	13:03:37	1799.97	19.69	7.07	568.14	4.45	18.34	0.23	-123.98
Last 5	13:08:37	2099.96	19.67	7.06	570.37	4.02	18.34	0.21	-123.92
Last 5	13:13:37	2399.95	19.99	7.05	572.49	3.97	18.34	0.18	-124.67
Variance 0			0.34	-0.01	0.17			-0.01	-0.47
Variance 1			-0.02	-0.01	2.23			-0.01	0.06
Variance 2			0.33	-0.02	2.12			-0.03	-0.75

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 35.31'

Grab Samples

HGWC-124
Grab

Product Name: Low-Flow System

Date: 2020-01-03 15:40:50

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 30 ft

Pump placement from TOC 30 ft

Well Information:

Well ID MW-32
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 18.2 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2239027 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	14:25:28	300.04	17.54	6.91	656.85	0.58	18.22	0.20	-50.99
Last 5	14:30:28	600.01	17.53	6.84	890.42	1.01	18.22	0.16	-57.29
Last 5	14:35:28	900.00	17.53	6.82	939.34	1.54	18.22	0.15	-59.58
Last 5	14:40:28	1199.99	17.49	6.82	951.06	1.52	18.22	0.14	-63.71
Last 5	14:45:28	1499.98	17.48	6.83	953.38	1.05	18.22	0.13	-67.62
Variance 0			0.00	-0.02	48.93			-0.01	-2.29
Variance 1			-0.04	0.01	11.72			-0.01	-4.13
Variance 2			-0.01	0.01	2.31			-0.01	-3.92

Notes

Three bottles: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B), one 250-mL plastic bottle for ions (EPA 300.0), and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth = 36.66'

Grab Samples

MW-32
Grab

Product Name: Low-Flow System

Date: 2020-01-22 12:25:11

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 642531
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 MW-32
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 19.06 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 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:09:03	300.03	17.05	6.64	990.81	0.60	19.10	1.00	76.38
Last 5	12:14:03	600.02	16.95	6.68	992.73	0.52	0.45	1.13	75.03
Last 5	12:19:03	900.02	16.96	6.66	987.74	0.45	19.12	1.07	73.96
Last 5	12:24:03	1200.02	16.87	6.68	982.21	0.42	19.11	1.14	72.97
Last 5									
Variance 0			-0.10	0.04	1.93			0.12	-1.35
Variance 1			0.01	-0.01	-5.00			-0.05	-1.07
Variance 2			-0.09	0.02	-5.52			0.06	-1.00

Notes

One bottle: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B). Total depth = 36.62 ft.

Grab Samples

MW-32
Grab

Product Name: Low-Flow System

Date: 2020-03-24 11:39:49

Project Information:

Operator Name Nelson Gunby
Company Name Geosyntec Consultants
Project Name GP-Plant 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-122
Well diameter 2 in
Well Total Depth 28.52 ft
Screen Length 10 ft
Depth to Water 4.61 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 18 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	11:26:54	300.03	11.67	7.08	461.63	3.35	4.62	1.69	48.52
Last 5	11:31:54	600.02	11.65	7.08	461.27	3.07	4.62	1.70	47.59
Last 5	11:36:54	900.02	11.69	7.08	461.23	3.20	4.62	1.69	46.91
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.02	-0.00	-0.36			0.01	-0.93
Variance 2			0.03	0.00	-0.04			-0.01	-0.68

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWA-122
Grab

Product Name: Low-Flow System

Date: 2020-03-25 09:30:54

Project Information:

Operator Name Nelson Gunby
Company Name Geosyntec Consultants
Project Name GP-Plant 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-120
Well diameter 2 in
Well Total Depth 67.55 ft
Screen Length 10 ft
Depth to Water 35.61 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	09:08:33	1800.03	12.94	6.78	949.70	0.93	35.57	0.25	-91.70
Last 5	09:13:33	2100.03	13.03	6.78	949.31	0.62	35.57	0.24	-90.42
Last 5	09:18:33	2400.03	13.12	6.79	948.69	0.55	35.55	0.22	-87.90
Last 5	09:23:33	2700.03	13.13	6.79	947.51	0.53	35.55	0.21	-83.72
Last 5	09:28:33	3000.03	13.18	6.80	948.82	0.53	35.56	0.21	-79.76
Variance 0			0.09	0.00	-0.63			-0.01	2.52
Variance 1			0.01	0.01	-1.18			-0.01	4.18
Variance 2			0.05	0.00	1.31			-0.00	3.95

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWC-120
Grab

Product Name: Low-Flow System

Date: 2020-03-25 10:53:52

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 25 ft

Pump placement from TOC 3 ft

Well Information:

Well ID HGWC-121A
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.01 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5965856 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	10:31:13	5101.03	18.19	6.97	752.05	1.63	13.00	5.08	146.47
Last 5	10:36:13	5401.03	17.98	6.94	799.10	0.71	13.00	4.76	151.04
Last 5	10:41:13	5701.03	17.95	6.93	834.69	0.69	13.00	4.25	143.36
Last 5	10:46:13	6001.03	18.14	6.92	836.95	0.68	13.00	4.23	137.93
Last 5	10:51:13	6301.03	18.40	6.91	855.52	0.51	13.00	4.25	141.10
Variance 0			-0.04	-0.01	35.59			-0.51	-7.68
Variance 1			0.20	-0.01	2.26			-0.02	-5.43
Variance 2			0.26	-0.01	18.57			0.02	3.17

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWC-121A
Grab

Product Name: Low-Flow System

Date: 2020-03-24 16:08:20

Project Information:

Operator Name Nelson Gunby
Company Name Geosyntec Consultants
Project Name GP-Plant 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-124
Well diameter 2 in
Well Total Depth 35.52 ft
Screen Length 10 ft
Depth to Water 8.06 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 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	15:41:44	8100.04	13.12	7.18	576.53	5.42	8.83	0.49	13.56
Last 5	15:51:44	8700.04	13.14	7.18	575.51	5.34	8.83	0.50	13.39
Last 5	15:56:44	9000.04	13.39	7.18	573.53	5.34	8.83	0.49	13.66
Last 5	16:01:44	9300.04	13.23	7.18	574.34	5.24	8.83	0.50	13.66
Last 5	16:06:44	9600.05	13.26	7.18	574.76	4.94	8.83	0.51	14.11
Variance 0			0.25	0.00	-1.98			-0.01	0.27
Variance 1			-0.17	0.00	0.81			0.00	-0.00
Variance 2			0.04	-0.00	0.42			0.01	0.45

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWC-124
Grab

Product Name: Low-Flow System

Date: 2020-03-25 14:08:50

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 34 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MW-32
Well diameter 2 in
Well Total Depth 36.55 ft
Screen Length 10 ft
Depth to Water 14.94 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4417564 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	13:46:22	600.02	17.99	6.89	964.76	0.33	14.80	4.36	28.84
Last 5	13:51:22	900.02	17.92	6.88	975.24	0.43	14.80	3.68	28.79
Last 5	13:56:22	1200.02	18.08	6.88	981.29	0.19	14.80	4.21	28.44
Last 5	14:01:22	1500.02	17.95	6.88	982.47	0.38	14.80	4.02	26.18
Last 5	14:06:22	1800.02	17.95	6.86	983.49	0.08	14.80	3.85	26.15
Variance 0			0.16	0.00	6.05			0.53	-0.35
Variance 1			-0.13	-0.00	1.19			-0.19	-2.27
Variance 2			-0.00	-0.02	1.02			-0.17	-0.02

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

MW-32
Grab

Low-Flow Test Report:

Test Date / Time: 3/27/2020 2:01:49 PM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: MW-39 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 13 ft Total Depth: 23 ft	Pump Type: Peristaltic Tubing Type: Poly ethylene Pump Intake From TOC: 18 ft Estimated Total Volume Pumped: 6000 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.05 ft	Instrument Used: SmarTROLL MP Serial Number: 364452
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Test Notes:

Three bottles: One 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
3/27/2020 2:01 PM	00:00	6.83 pH	19.91 °C	662.12 µS/cm	7.40 mg/L		126.5 mV		200.00 ml/min
3/27/2020 2:06 PM	05:00	6.83 pH	18.20 °C	634.02 µS/cm	7.24 mg/L	2.96 NTU	56.8 mV	6.92 ft	200.00 ml/min
3/27/2020 2:11 PM	10:00	6.84 pH	17.86 °C	684.43 µS/cm	7.37 mg/L	2.08 NTU	55.6 mV	6.92 ft	200.00 ml/min
3/27/2020 2:16 PM	15:00	6.85 pH	18.21 °C	685.81 µS/cm	6.79 mg/L	3.17 NTU	52.4 mV	6.94 ft	200.00 ml/min
3/27/2020 2:21 PM	20:00	6.84 pH	18.36 °C	687.22 µS/cm	6.26 mg/L	3.94 NTU	52.9 mV	6.94 ft	200.00 ml/min
3/27/2020 2:26 PM	25:00	6.86 pH	18.50 °C	686.01 µS/cm	5.97 mg/L	4.22 NTU	50.8 mV	6.94 ft	200.00 ml/min
3/27/2020 2:31 PM	30:00	6.85 pH	18.88 °C	685.13 µS/cm	5.95 mg/L	4.61 NTU	51.7 mV	6.94 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-39	Grab

Product Name: Low-Flow System

Date: 2020-04-24 13:09:36

Project Information:

Operator Name Chad Russo
Company Name Geosyntec
Project Name Plant Hammond GW Monitoring
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 642533
Turbidity Make/Model

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-39
Well diameter 2 in
Well Total Depth 23 ft
Screen Length 10 ft
Depth to Water 11.52 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 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%	+/- 5		+/- 10%	+/- 10
Last 5	12:58:05	300.10	17.97	6.83	957.32	0.74	11.54	0.66	65.88
Last 5	13:03:05	600.02	17.73	6.83	960.57	0.94	11.54	0.61	64.49
Last 5	13:08:05	900.02	17.95	6.82	970.13	0.62	11.54	0.62	63.74
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.25	0.00	3.25			-0.05	-1.39
Variance 2			0.22	-0.00	9.56			0.01	-0.75

Notes

One bottle: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B).

Grab Samples

MW-39
Grab

GROUNDWATER SAMPLING LOG SHEET

Client: GA Power
 Site: Plant Hammond
 Well ID: HGWc-125 (mw-380)
 Total Depth (ft): 360'
 Depth to Water (ft): 93.16'
 Well Diameter (in): 2"
 Well Volume (gal) = 0.041d³h: 2.76
 Well Volume (L) = gal * 3.785: 10.45

Project No.: GW65813
 Location: AP-?
 Pump Type/Model: Bladder pump
 Tubing Material: Poly
 Pump Intake Depth (ft): 55'
 Start/Stop Purge Time: 0900 - 1230
 Purge Rate (mL/min): ~100 mL
 Total Purge Volume (L): 3L

Sampling Date: 5/22/20
 Sampler's Name: Ben Weismann
 Sample Collection Time: 1230
 Sample Purge Rate (mL/min): 100 mL/min
 Sample ID: HGWc-125
 Laboratory Analyses: App. III - IV

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

Purge Method: Low-Flow Well Volume Other:
 Sampling Method: Pump Discharge Other:

QA/QC Collected? no
 QA/QC I.D. N/A

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.)
1215	6.46	1.08	106.5	0.92	20.30	5.32	43.13	100 mL/min	2.25	
1223	6.43	1.08	104.9	0.88	20.14	5.46	47.14	"	2.75	
1230	6.43	1.09	101.4	0.88	20.04	5.76	43.14	"	3L	
<i>BAW 5/22/20</i>										
<hr/>										
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	

Product Name: Low-Flow System

Date: 2020-06-15 15:45:12

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
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-120
Well diameter 2 in
Well Total Depth 61.5 ft
Screen Length 10 ft
Depth to Water 40.35 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 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	15:23:27	599.92	19.28	6.77	972.60	8.25	40.40	0.31	64.58
Last 5	15:28:27	899.92	19.38	6.78	971.94	4.70	40.40	0.16	67.26
Last 5	15:33:27	1199.92	19.37	6.78	971.93	4.19	40.40	0.13	70.12
Last 5	15:38:27	1499.86	19.49	6.79	971.39	4.58	40.40	0.11	73.15
Last 5	15:43:27	1799.86	19.15	6.80	972.20	4.86	40.40	0.11	76.76
Variance 0			-0.01	0.00	-0.02			-0.03	2.86
Variance 1			0.11	0.01	-0.54			-0.02	3.03
Variance 2			-0.34	0.00	0.82			0.01	3.60

Notes

Five bottles: One 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWC-120
Grab

Product Name: Low-Flow System

Date: 2020-06-16 10:29:13

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
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-125
Well diameter 2 in
Well Total Depth 64.6 ft
Screen Length 10 ft
Depth to Water 43.81 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 20 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	10:07:26	3900.17	18.74	6.26	1063.91	8.69	43.82	0.07	74.91
Last 5	10:12:26	4200.07	18.73	6.27	1064.45	7.64	43.82	0.06	76.67
Last 5	10:17:26	4500.07	18.75	6.27	1066.03	7.33	43.82	0.06	78.39
Last 5	10:22:26	4800.07	18.80	6.27	1066.86	5.11	43.82	0.05	80.04
Last 5	10:27:26	5100.07	18.79	6.29	1071.60	4.90	43.82	0.05	81.63
Variance 0			0.02	0.00	1.58			-0.00	1.72
Variance 1			0.05	0.00	0.83			-0.00	1.65
Variance 2			-0.01	0.02	4.74			-0.01	1.59

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWC-125
Grab

Product Name: Low-Flow System

Date: 2020-06-16 12:18:43

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
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-126
Well diameter 2 in
Well Total Depth 69.08 ft
Screen Length 10 ft
Depth to Water 40.86 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 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	11:56:48	600.02	19.45	7.05	773.27	3.72	42.12	0.13	-23.62
Last 5	12:01:48	900.02	19.44	6.94	836.60	2.20	42.19	0.11	-19.96
Last 5	12:06:48	1200.02	19.37	6.91	844.40	2.23	43.34	0.10	-10.78
Last 5	12:11:48	1500.02	19.19	6.91	849.49	2.06	42.40	0.09	-5.35
Last 5	12:16:48	1800.02	19.16	6.92	853.11	2.22	42.48	0.08	-2.20
Variance 0			-0.07	-0.02	7.81			-0.01	9.18
Variance 1			-0.18	-0.00	5.08			-0.01	5.43
Variance 2			-0.03	0.00	3.62			-0.01	3.15

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B). Total depth:

Grab Samples

HGWC-126
Grab

Product Name: Low-Flow System

Date: 2020-06-15 16:33:35

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 23 ft

Pump placement from TOC 22 ft

Well Information:

Well ID MW-41
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.04 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1926587 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 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	16:11:57	600.02	18.04	6.80	979.08	3.04	12.08	0.34	85.77
Last 5	16:16:57	900.02	17.92	6.83	979.02	1.65	12.08	0.37	83.16
Last 5	16:21:57	1200.02	17.89	6.85	980.21	2.73	12.08	0.21	80.94
Last 5	16:26:57	1500.02	17.99	6.87	979.89	2.53	12.08	0.17	79.21
Last 5	16:31:57	1800.02	17.99	6.88	978.86	2.12	12.08	0.23	77.62
Variance 0			-0.03	0.02	1.20			-0.16	-2.22
Variance 1			0.10	0.01	-0.33			-0.04	-1.73
Variance 2			0.00	0.02	-1.03			0.07	-1.59

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-41
Grab

APPENDIX D

Statistical Analyses

April 10, 2020

Ms. Lauren Petty, PG
SCS Groundwater Project Manager
Southern Company Services
Environmental Solutions
3535 Colonnade Parkway
Birmingham, Alabama 35243

**Subject: 2019 Semi-Annual Groundwater Monitoring & Corrective Action
Statistical Summary Letter**

Dear Ms. Petty:

This 2019 Semi-Annual Groundwater Monitoring & Corrective Action Statistical Summary Letter provides the statistical analysis of the October 2019 Assessment Monitoring Event for Georgia Power Company's Plant Hammond Ash Pond 3 (AP-3). The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015), the Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management Chapter 391-3-4-.10, and follows the USEPA document *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance* (Unified Guidance) (USEPA, 2009).

A network of four compliance monitoring wells was installed to monitor groundwater conditions near AP-3. One well (HGWA-122) is designated for monitoring of background conditions and three wells (HGWC-120, HGWC-121A, and HGWC-124) are designated for monitoring of downgradient conditions.

1. First Semi-Annual Assessment Event Statistical Method

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 Unified Guidance.

Time series plots generated by Sanitas are used to identify suspected outliers, or extreme values, of Appendix III and Appendix IV constituents that would result in compliance limits that are not representative of the current background data population. Suspected outliers identified in all wells are formally tested using Tukey's box plot method and, when confirmed, flagged in the computer database with "o" and deselected prior to construction of statistical limits. Background well data

were updated following the Unified Guidance recommendation, evaluating recent background data using Tukey's box plot method for outliers and Sen's Slope/Mann-Kendall methods for potential trends.

1.1. Appendix III Statistical Methods

Based on guidance from GA EPD, 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 (PLs) are constructed using data from upgradient well HGWA-122 to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs). An "initial exceedance" occurs when an Appendix III constituent reported in the groundwater of a downgradient compliance monitoring well exceeds the constituent's associated PL. The 1-of-2 resample plan allows for collection of an independent resample. A confirmed exceedance is noted only when the resample confirms the initial exceedance by also exceeding the statistical limit. If the resample falls within its respective prediction limit, no exceedance is declared.

1.2. Appendix IV Statistical Methods

Constituents detected during the initial annual Appendix IV sampling event (August 2019) were sampled during the October 2019 assessment monitoring event. To statistically compare groundwater data to groundwater protection standards (GWPS), confidence intervals are constructed for each of the detected Appendix IV constituents in each downgradient compliance monitoring well. The 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 a confidence interval exceeds a GWPS, 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 GA EPD CCR Rule 391-3-4-.10(6)(a). Parametric tolerance limits were used when data followed a normal or transformed-normal distribution to calculate background limits from pooled upgradient well data for Appendix IV parameters with a target of 95% confidence and 95% coverage. Nonparametric tolerance limits are utilized when the percentage of nondetects is greater than 50% or when data do not follow a normal or transformed-normal distribution. 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.
- (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 GA EPD's CCR Rule. The GA 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 the attached Summary of Background Concentrations and Groundwater Protection Standards table.

2. First Semi-Annual Assessment Event Statistical Results

2.1. Appendix III Statistical Results

Review of the Sanitas results indicates that the following verified SSIs were noted following the October 2019 sampling event:

- Boron: HGWC-120, HGWC-121A, HGWC-124;
- Calcium: HGWC-120, HGWC-121A, HGWC-124;
- Chloride: HGWC-121A;
- Fluoride: HGWC-120;
- pH: HGWC-124;
- Sulfate: HGWC-120, HGWC-121A, HGWC-124;
- TDS: HGWC-120, HGWC-121A.

2.2. Appendix IV Statistical Results

Review of the Sanitas results indicates that using the GWPS established according to both 40 CFR § 257.95(h) and 391-3-4-.10(6)(a), the following SSLs were identified:

AP-3 (Federal CCR Rule):

Ms. Lauren Petty, PG
April 10, 2020
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- No SSLs were reported above federal GWPS.

AP-3 (GA EPD CCR Rule):

- Lithium: HGWC-120
- Molybdenum: HGWC-120

A groundwater exceedance notification will be placed in the operating record pursuant to 40 CFR § 257.95(g).

Should you have any questions regarding these responses, please do not hesitate to contact either of the undersigned at (678) 202-9500.

Sincerely,



Whitney Law, P.E.
Senior Engineer



Noelia Muskus
Senior Staff Professional

Attachment: 1. Summary of Background Concentrations and Groundwater Protection Standards
 2. Statistical Analyses

ATTACHMENT 1

Summary of Background Concentrations and Groundwater Protection Standards

Summary of Background Concentrations and Groundwater Protection Standards

October 2019 Assessment Monitoring

Plant Hammond AP-3, Floyd County, Georgia

Analyte	MCL	RSL ⁽¹⁾	Units	Background ⁽²⁾	Federal GWPS ⁽³⁾	State GWPS ⁽⁴⁾
Antimony	0.006	--	mg/L	0.003	0.006	0.006
Arsenic	0.01	--	mg/L	0.005	0.01	0.01
Barium	2	--	mg/L	0.049	2	2
Beryllium	0.004	--	mg/L	0.003	0.004	0.004
Cadmium	0.005	--	mg/L	0.0025	0.005	0.005
Chromium	0.1	--	mg/L	0.01	0.1	0.1
Cobalt	N/A	0.006	mg/L	0.005	0.006	0.005
Fluoride	4	--	mg/L	0.29	4	4
Lead	N/A	0.015	mg/L	0.005	0.015	0.005
Lithium	N/A	0.04	mg/L	0.03	0.04	0.03
Mercury	0.002	--	mg/L	0.0005	0.002	0.002
Molybdenum	N/A	0.1	mg/L	0.01	0.1	0.01
Selenium	0.05	--	mg/L	0.01	0.05	0.05
Thallium	0.002	--	mg/L	0.001	0.002	0.002
Combined Radium-226/228	5	--	pCi/L	1.87	5	5

Notes:

"--" = not applicable

"MCL" - Maximum Contaminant Level

"mg/L" = milligrams per liter

"N/A" - Not Available

"pCi/L" = picocuries per liter

1. Regional Screening Level (RSL) applied for constituent per CCR Rule Amendment, July 30, 2018. The value listed for lead is the established United States Environmental Protection Agency (USEPA) Action Level for drinking water.
2. 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).
3. Under 40 CFR §257.95(h)(1-3) the GWPS is: (i) the MCL established under 141.62 and 141.66 of this title; (ii) where an MCL has not been established a rule-specific GWPS is used; or (iii) background concentrations for constituents where the background level is higher than the MCL or rule-specified GWPS.
4. Under the existing Georgia EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background concentrations for constituents where the background level is higher than the MCL.

ATTACHMENT 2

Statistical Analyses

OUTLIER TEST

Outlier Summary - AP-3

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 3:19 PM

HGWA-122 Total Dissolved Solids (mg/L)
814 (o)

4/2/2019

Note:

1. Outlier was flagged during the 2019 Annual CCR Report statistical analysis.

Outlier Analysis - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 3:18 PM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Distribution</u>	<u>Normality Test</u>
Fluoride (mg/L)	HGWC-121A	Yes	1.2	10/2/2017	NP	NaN	11	0.3045	0.3248	In(x)	ShapiroWilk
pH (s.u.)	HGWC-120	Yes	7.66	10/2/2017	NP	NaN	11	6.878	0.2714	In(x)	ShapiroWilk
pH (s.u.)	HGWC-121A	Yes	7.65	10/2/2017	NP	NaN	11	6.79	0.292	In(x)	ShapiroWilk

Note:
Values were similar to neighboring wells. Therefore, no outliers were flagged in this round of analysis.

Outlier Analysis - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 3:18 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony (mg/L)	HGWA-122 (bg)	n/a	n/a	n/a	NP	NaN	9	0.003	0	unknown	ShapiroWilk
Antimony (mg/L)	HGWC-120	n/a	n/a	n/a	NP	NaN	9	0.003	0	unknown	ShapiroWilk
Antimony (mg/L)	HGWC-121A	n/a	n/a	n/a	NP	NaN	9	0.003	0	unknown	ShapiroWilk
Antimony (mg/L)	HGWC-124	n/a	n/a	n/a	NP	NaN	9	0.003	0	unknown	ShapiroWilk
Arsenic (mg/L)	HGWA-122 (bg)	n/a	n/a	n/a	NP	NaN	9	0.005	0	unknown	ShapiroWilk
Arsenic (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	9	0.003678	0.001991	ln(x)	ShapiroWilk
Arsenic (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	9	0.004156	0.001679	ln(x)	ShapiroWilk
Arsenic (mg/L)	HGWC-124	n/a	n/a	n/a	NP	NaN	9	0.004511	0.001467	unknown	ShapiroWilk
Barium (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	10	0.0432	0.002071	x^6	ShapiroWilk
Barium (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	10	0.0495	0.004093	ln(x)	ShapiroWilk
Barium (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	10	0.07765	0.007023	ln(x)	ShapiroWilk
Barium (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	10	0.07043	0.004566	normal	ShapiroWilk
Beryllium (mg/L)	HGWA-122 (bg)	n/a	n/a	n/a	NP	NaN	9	0.003	0	unknown	ShapiroWilk
Beryllium (mg/L)	HGWC-120	n/a	n/a	n/a	NP	NaN	9	0.003	0	unknown	ShapiroWilk
Beryllium (mg/L)	HGWC-121A	n/a	n/a	n/a	NP	NaN	9	0.003	0	unknown	ShapiroWilk
Beryllium (mg/L)	HGWC-124	n/a	n/a	n/a	NP	NaN	9	0.003	0	unknown	ShapiroWilk
Boron (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	11	0.272	0.04241	x^2	ShapiroWilk
Boron (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	11	1.165	0.1092	x^4	ShapiroWilk
Boron (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	11	2.885	0.4534	ln(x)	ShapiroWilk
Boron (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	11	0.4974	0.04233	x^5	ShapiroWilk
Cadmium (mg/L)	HGWA-122 (bg)	n/a	n/a	n/a	NP	NaN	9	0.0025	0	unknown	ShapiroWilk
Cadmium (mg/L)	HGWC-120	n/a	n/a	n/a	NP	NaN	9	0.0025	0	unknown	ShapiroWilk
Cadmium (mg/L)	HGWC-121A	n/a	n/a	n/a	NP	NaN	9	0.0025	0	unknown	ShapiroWilk
Cadmium (mg/L)	HGWC-124	n/a	n/a	n/a	NP	NaN	9	0.0025	0	unknown	ShapiroWilk
Calcium (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	11	74.16	7.826	ln(x)	ShapiroWilk
Calcium (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	11	164.4	10.15	ln(x)	ShapiroWilk
Calcium (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	11	181.5	9.31	ln(x)	ShapiroWilk
Calcium (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	11	96.81	5.548	x^6	ShapiroWilk
Chloride (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	11	3.164	0.5005	ln(x)	ShapiroWilk
Chloride (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	10	3.37	0.3592	ln(x)	ShapiroWilk
Chloride (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	11	44.37	11.45	ln(x)	ShapiroWilk
Chloride (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	11	3.264	0.4523	x^2	ShapiroWilk
Chromium (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	10	0.005318	0.004935	ln(x)	ShapiroWilk
Chromium (mg/L)	HGWC-120	n/a	n/a	n/a	NP	NaN	10	0.009072	0.002935	unknown	ShapiroWilk
Chromium (mg/L)	HGWC-121A	n/a	n/a	n/a	NP	NaN	10	0.01	0	unknown	ShapiroWilk
Chromium (mg/L)	HGWC-124	n/a	n/a	n/a	NP	NaN	10	0.009046	0.003017	unknown	ShapiroWilk
Cobalt (mg/L)	HGWA-122 (bg)	n/a	n/a	n/a	NP	NaN	10	0.005	0	unknown	ShapiroWilk
Cobalt (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	10	0.00345	0.0007561	ln(x)	ShapiroWilk
Cobalt (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	10	0.00361	0.002239	ln(x)	ShapiroWilk
Cobalt (mg/L)	HGWC-124	n/a	n/a	n/a	NP	NaN	10	0.005	0	unknown	ShapiroWilk
Fluoride (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	12	0.1508	0.04963	normal	ShapiroWilk
Fluoride (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	12	0.7892	0.4019	ln(x)	ShapiroWilk
Fluoride (mg/L)	HGWC-121A	Yes	1.2	10/2/2017	NP	NaN	11	0.3045	0.3248	ln(x)	ShapiroWilk
Fluoride (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	11	0.1344	0.08742	ln(x)	ShapiroWilk
Lead (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	10	0.00354	0.002351	ln(x)	ShapiroWilk
Lead (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	10	0.003537	0.002356	ln(x)	ShapiroWilk
Lead (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	10	0.004043	0.002019	ln(x)	ShapiroWilk
Lead (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	10	0.003518	0.002387	ln(x)	ShapiroWilk
Lithium (mg/L)	HGWA-122 (bg)	n/a	n/a	n/a	NP	NaN	10	0.03	0	unknown	ShapiroWilk
Lithium (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	10	0.03275	0.002097	x^6	ShapiroWilk

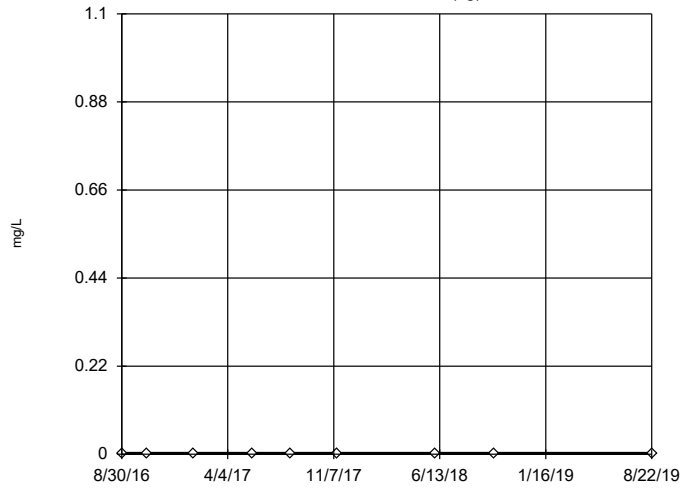
Outlier Analysis - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 3:18 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Lithium (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	10	0.00899	0.0007062	x^(1/3)	ShapiroWilk
Lithium (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	10	0.02557	0.02575	ln(x)	ShapiroWilk
Mercury (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	9	0.0003503	0.0002247	ln(x)	ShapiroWilk
Mercury (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	9	0.0004011	0.0001964	ln(x)	ShapiroWilk
Mercury (mg/L)	HGWC-121A	n/a	n/a	n/a	NP	NaN	9	0.0005	0	unknown	ShapiroWilk
Mercury (mg/L)	HGWC-124	n/a	n/a	n/a	NP	NaN	9	0.0004501	0.0001497	unknown	ShapiroWilk
Molybdenum (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	10	0.00402	0.002473	ln(x)	ShapiroWilk
Molybdenum (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	10	0.02828	0.008299	ln(x)	ShapiroWilk
Molybdenum (mg/L)	HGWC-121A	n/a	n/a	n/a	NP	NaN	10	0.01	0	unknown	ShapiroWilk
Molybdenum (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	10	0.00561	0.004629	ln(x)	ShapiroWilk
pH (s.u.)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	11	6.619	0.1346	ln(x)	ShapiroWilk
pH (s.u.)	HGWC-120	Yes	7.66	10/2/2017	NP	NaN	11	6.878	0.2714	ln(x)	ShapiroWilk
pH (s.u.)	HGWC-121A	Yes	7.65	10/2/2017	NP	NaN	11	6.79	0.292	ln(x)	ShapiroWilk
pH (s.u.)	HGWC-124	No	n/a	n/a	NP	NaN	11	7.073	0.05676	ln(x)	ShapiroWilk
Selenium (mg/L)	HGWA-122 (bg)	n/a	n/a	n/a	NP	NaN	9	0.009056	0.002833	unknown	ShapiroWilk
Selenium (mg/L)	HGWC-120	n/a	n/a	n/a	NP	NaN	9	0.009111	0.002667	unknown	ShapiroWilk
Selenium (mg/L)	HGWC-121A	n/a	n/a	n/a	NP	NaN	9	0.009011	0.002967	unknown	ShapiroWilk
Selenium (mg/L)	HGWC-124	n/a	n/a	n/a	NP	NaN	9	0.009044	0.002867	unknown	ShapiroWilk
Sulfate (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	11	47.02	2.883	x^6	ShapiroWilk
Sulfate (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	11	282.4	23.31	ln(x)	ShapiroWilk
Sulfate (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	11	266.3	32.58	ln(x)	ShapiroWilk
Sulfate (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	11	74.06	3.275	ln(x)	ShapiroWilk
Thallium (mg/L)	HGWA-122 (bg)	n/a	n/a	n/a	NP	NaN	9	0.001	0	unknown	ShapiroWilk
Thallium (mg/L)	HGWC-120	n/a	n/a	n/a	NP	NaN	9	0.001	0	unknown	ShapiroWilk
Thallium (mg/L)	HGWC-121A	n/a	n/a	n/a	NP	NaN	9	0.001	0	unknown	ShapiroWilk
Thallium (mg/L)	HGWC-124	n/a	n/a	n/a	NP	NaN	9	0.001	0	unknown	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	10	272.8	39.42	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-120	No	n/a	n/a	NP	NaN	10	692.2	63.97	x^4	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-121A	No	n/a	n/a	NP	NaN	11	837.6	67.61	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-124	No	n/a	n/a	NP	NaN	10	363	22.35	ln(x)	ShapiroWilk
Total Radium (pCi/L)	HGWA-122 (bg)	No	n/a	n/a	NP	NaN	10	0.8285	0.3565	normal	ShapiroWilk
Total Radium (pCi/L)	HGWC-120	No	n/a	n/a	NP	NaN	10	0.941	0.3639	ln(x)	ShapiroWilk
Total Radium (pCi/L)	HGWC-121A	No	n/a	n/a	NP	NaN	10	0.8455	0.4497	normal	ShapiroWilk
Total Radium (pCi/L)	HGWC-124	No	n/a	n/a	NP	NaN	10	0.8362	0.2251	sqrt(x)	ShapiroWilk

Tukey's Outlier Screening

HGWA-122 (bg)

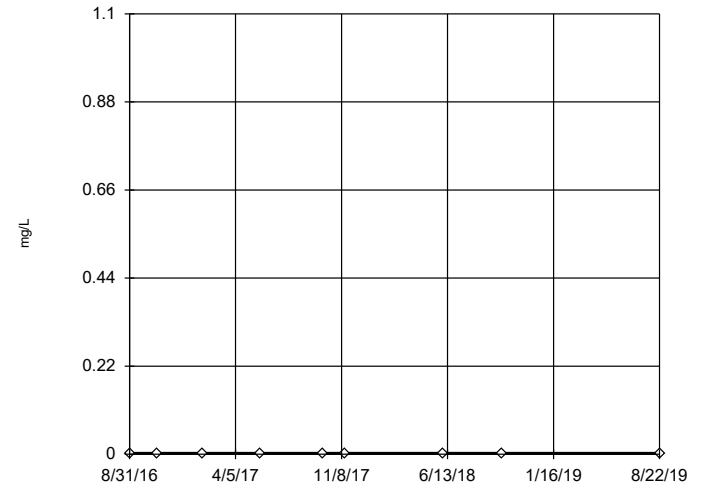


n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Antimony Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-120

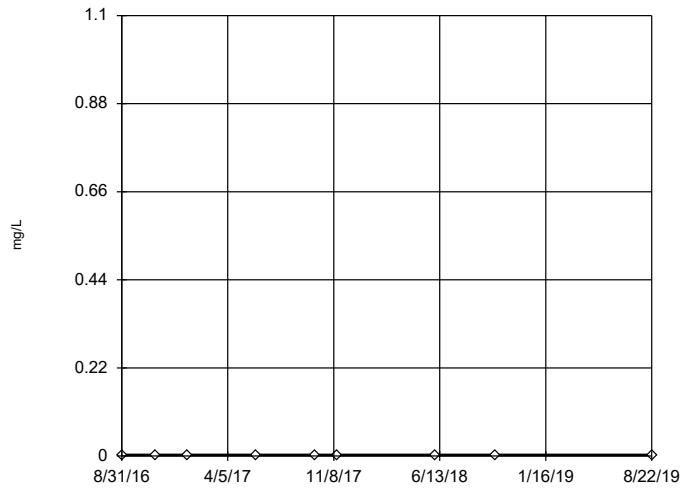


n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Antimony Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-121A

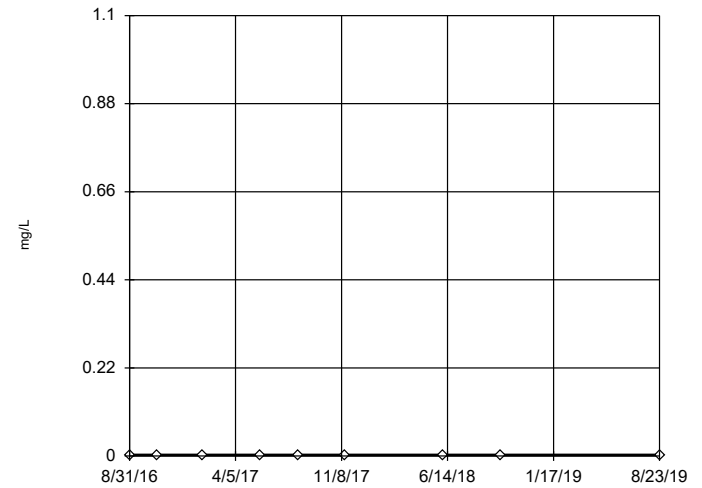


n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Antimony Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

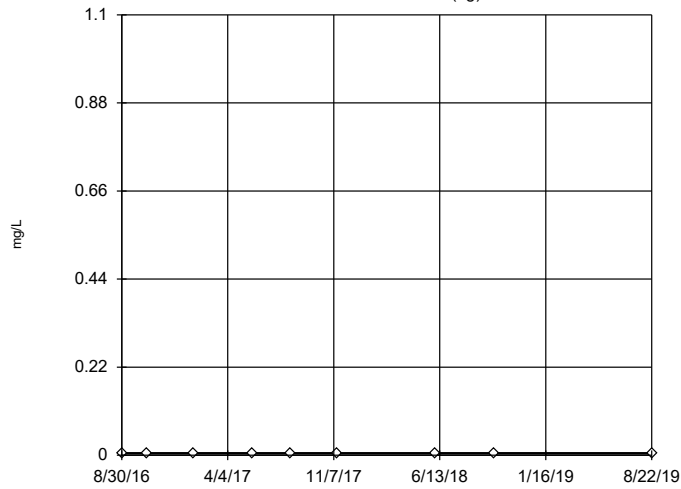
HGWC-124



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Antimony Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

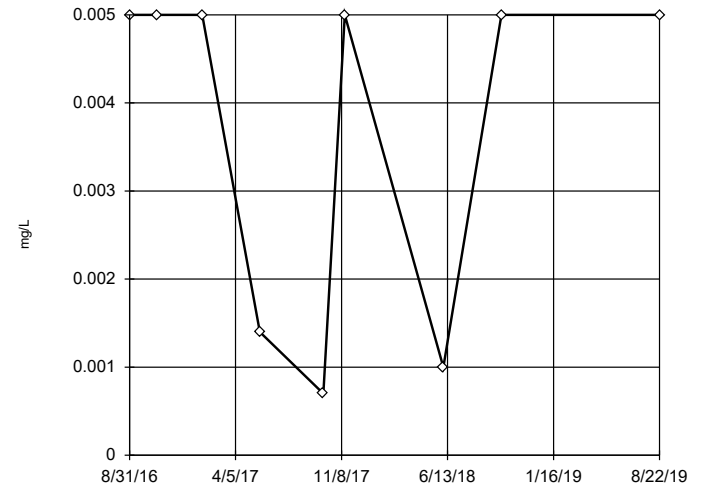
Tukey's Outlier Screening HGWA-122 (bg)



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Arsenic Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

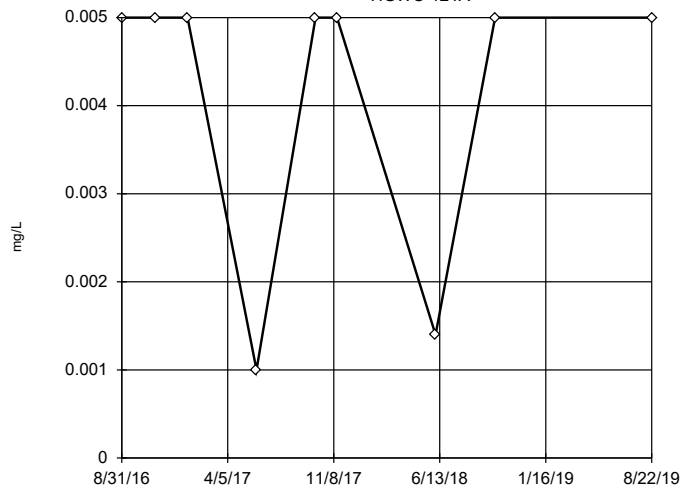
Tukey's Outlier Screening HGWC-120



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.3773,
 low cutoff = 0.00001568,
 based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

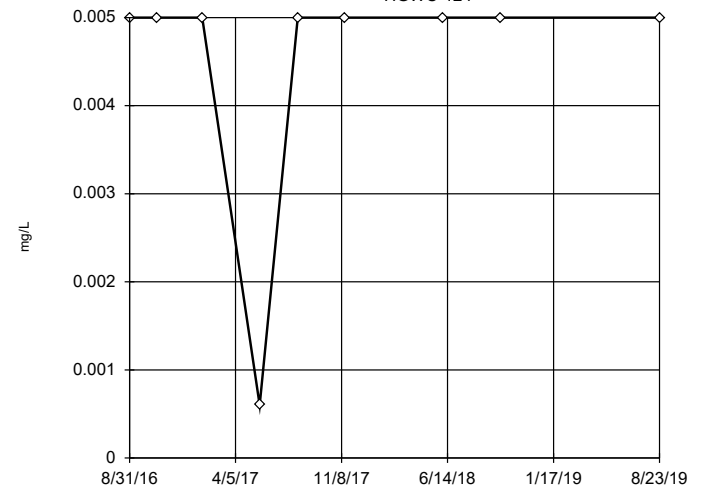
Tukey's Outlier Screening HGWC-121A



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.03375,
 low cutoff = 0.000392,
 based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

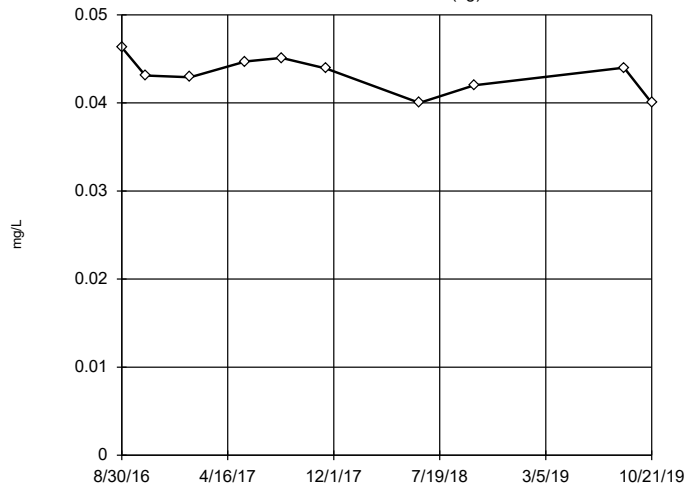
Tukey's Outlier Screening HGWC-124



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were cube root transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Arsenic Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

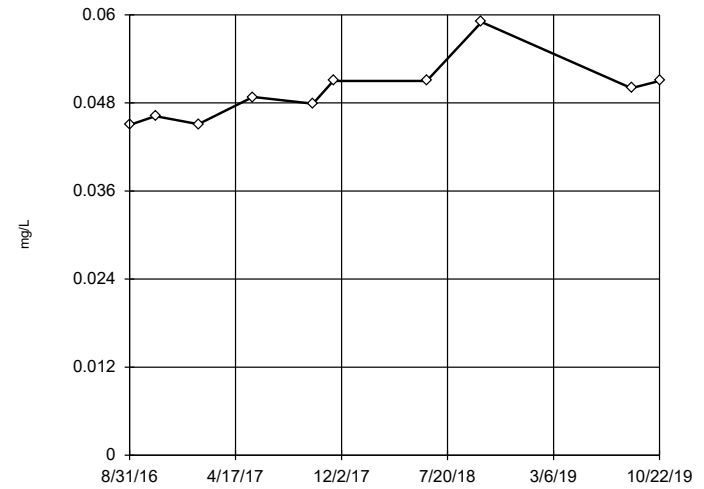
Tukey's Outlier Screening
HGWA-122 (bg)



n = 10
No outliers found. Tukey's method selected by user.
Data were x*6 transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.05138, low cutoff = -0.04191, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

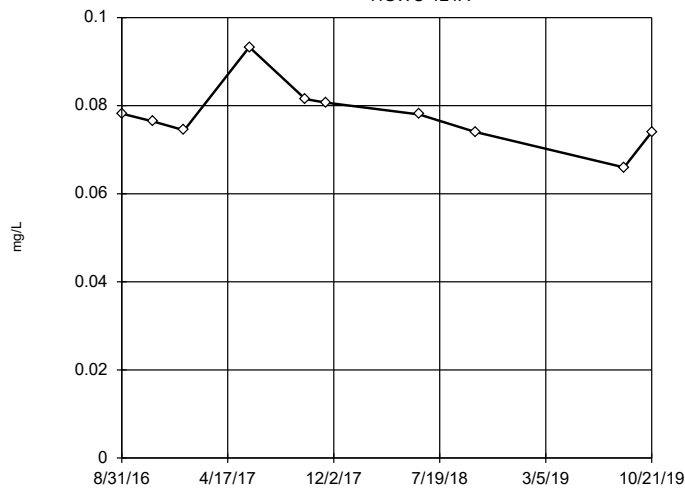
Tukey's Outlier Screening
HGWC-120



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.07113, low cutoff = 0.03273, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

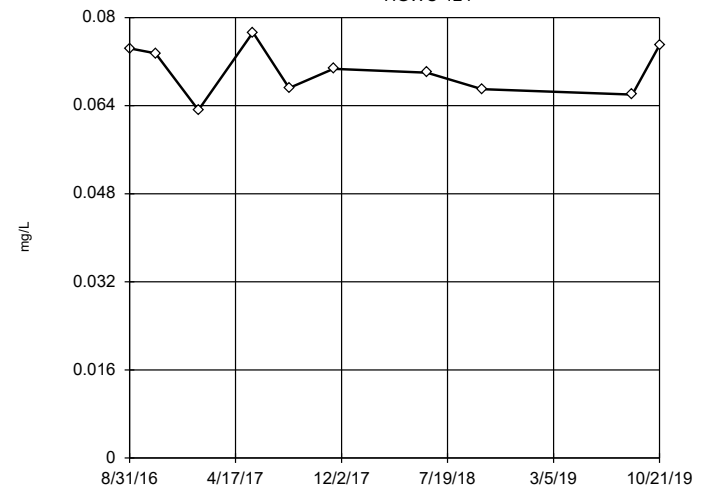
Tukey's Outlier Screening
HGWC-121A



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.1067, low cutoff = 0.05622, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

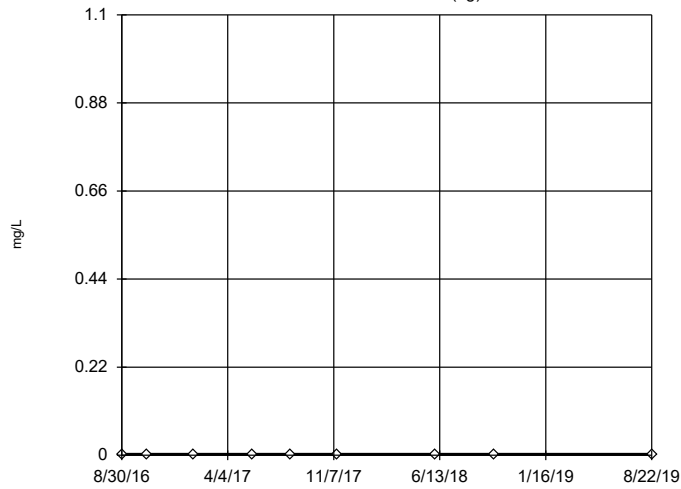
Tukey's Outlier Screening
HGWC-124



n = 10
No outliers found. Tukey's method selected by user.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
High cutoff = 0.0993, low cutoff = 0.0419, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

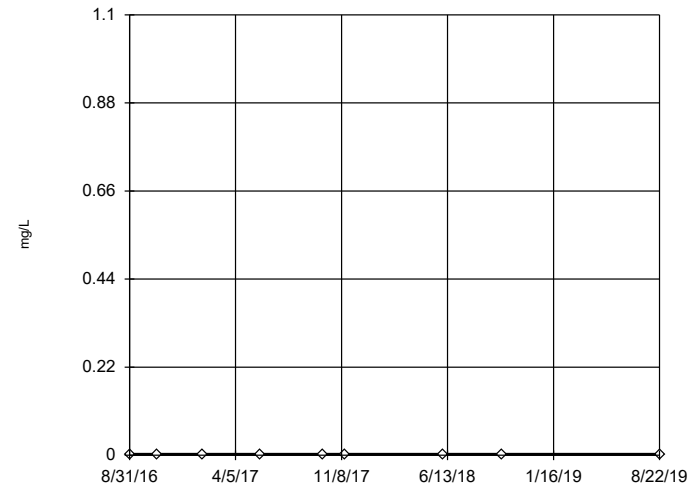
Tukey's Outlier Screening HGWA-122 (bg)



n = 9
No outliers found.
Tukey's method selected by user.
Data were square root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Beryllium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

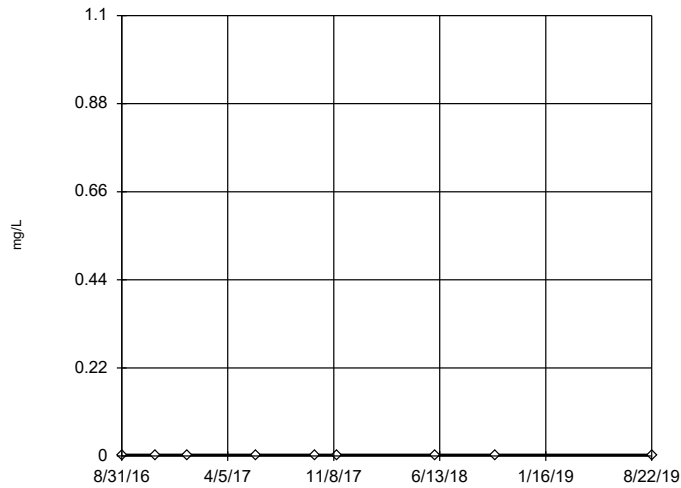
Tukey's Outlier Screening HGWC-120



n = 9
No outliers found.
Tukey's method selected by user.
Data were square root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Beryllium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

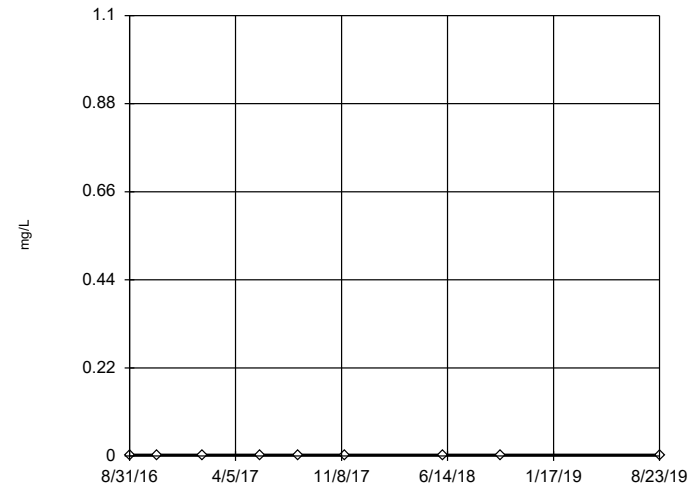
Tukey's Outlier Screening HGWC-121A



n = 9
No outliers found.
Tukey's method selected by user.
Data were square root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Beryllium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

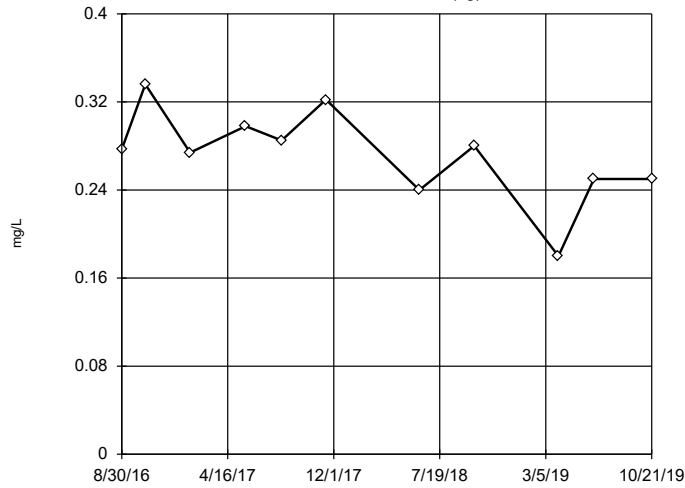
Tukey's Outlier Screening HGWC-124



n = 9
No outliers found.
Tukey's method selected by user.
Data were square root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Beryllium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

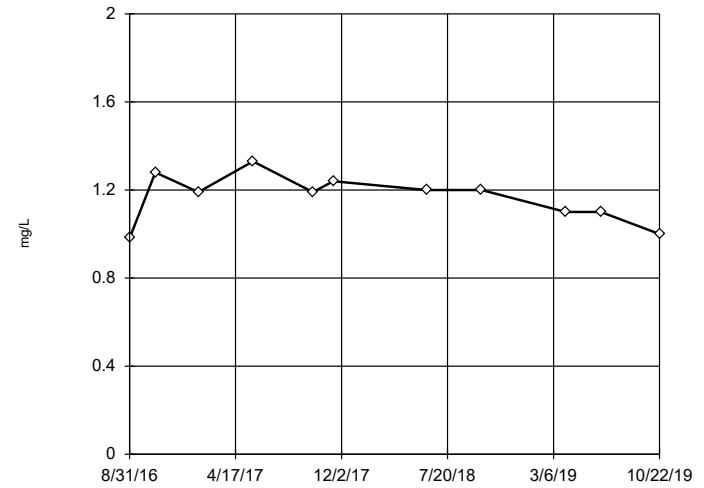
Tukey's Outlier Screening
HGWA-122 (bg)



n = 11
No outliers found. Tukey's method selected by user.
Data were square transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.4095, low cutoff = -0.1281, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

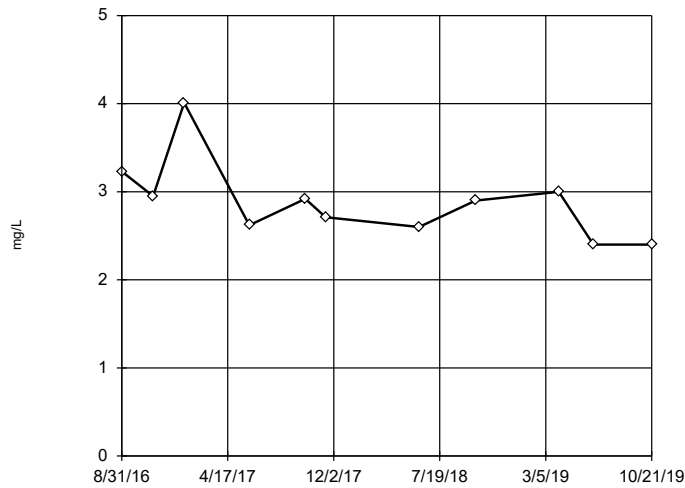
Tukey's Outlier Screening
HGWC-120



n = 11
No outliers found. Tukey's method selected by user.
Data were x^4 transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.5, low cutoff = -1.054, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

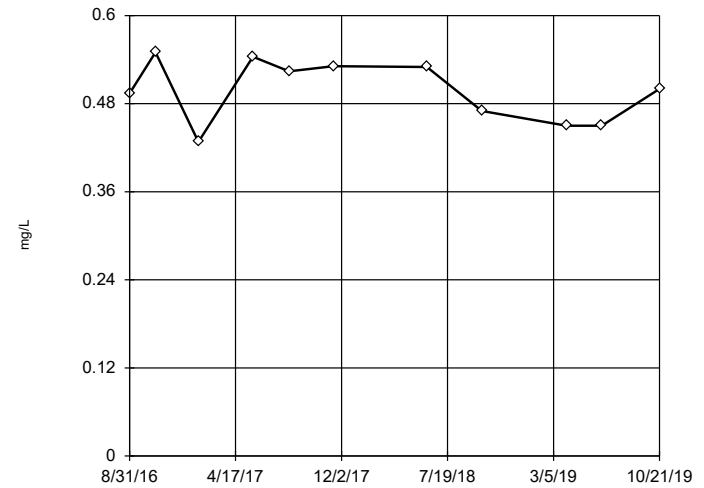
Tukey's Outlier Screening
HGWC-121A



n = 11
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 4.609, low cutoff = 1.693, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

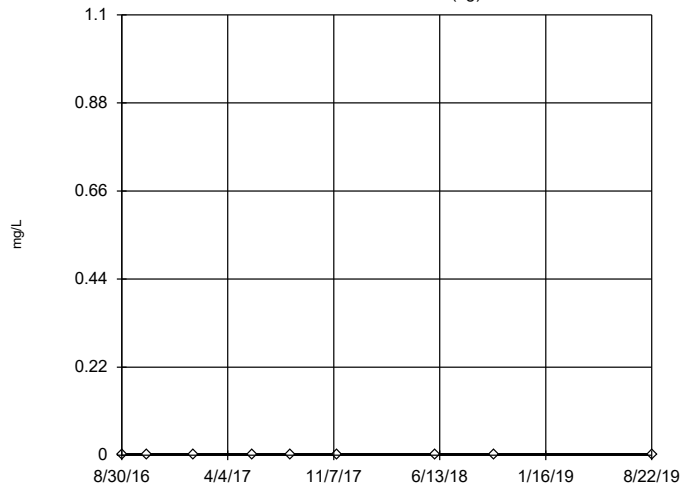
Tukey's Outlier Screening
HGWC-124



n = 11
No outliers found. Tukey's method selected by user.
Data were x^5 transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.6471, low cutoff = -0.5554, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

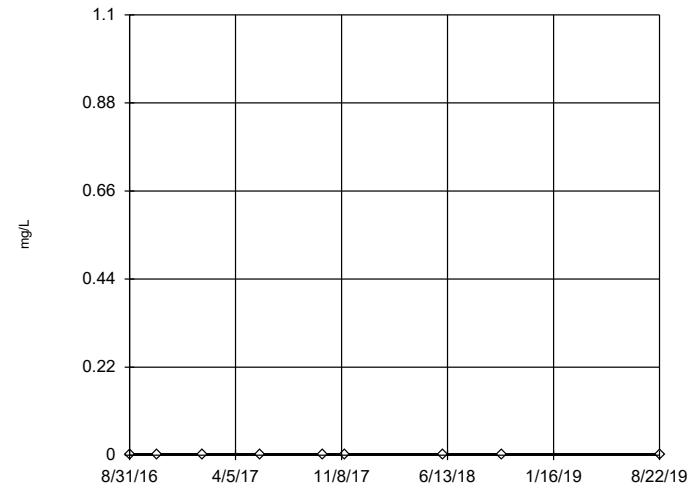
Tukey's Outlier Screening HGWA-122 (bg)



n = 9
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cadmium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

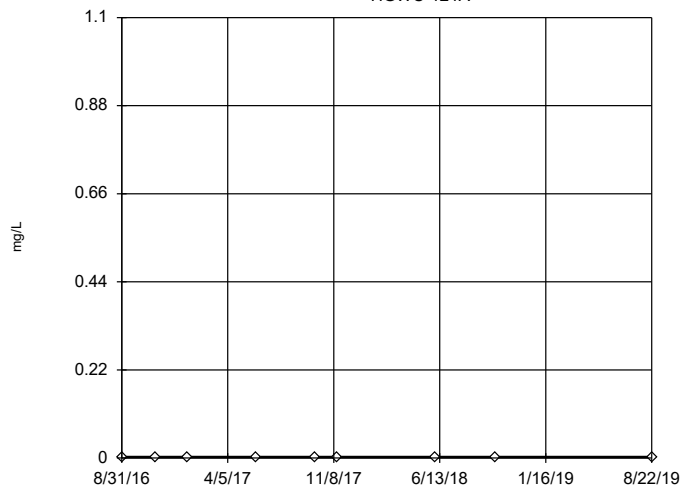
Tukey's Outlier Screening HGWC-120



n = 9
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cadmium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

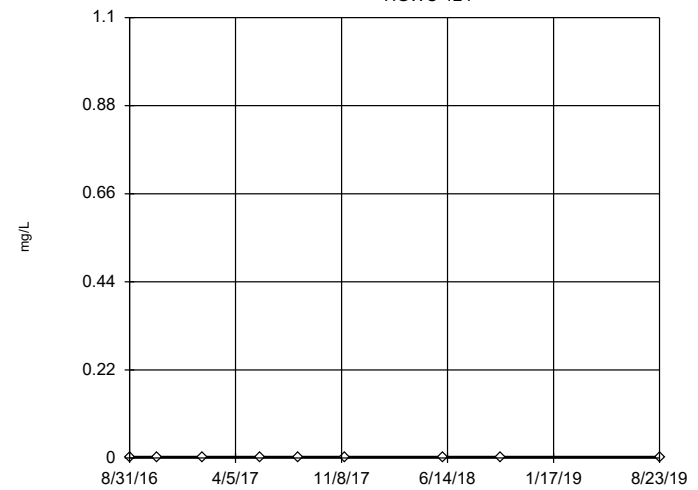
Tukey's Outlier Screening HGWC-121A



n = 9
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cadmium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

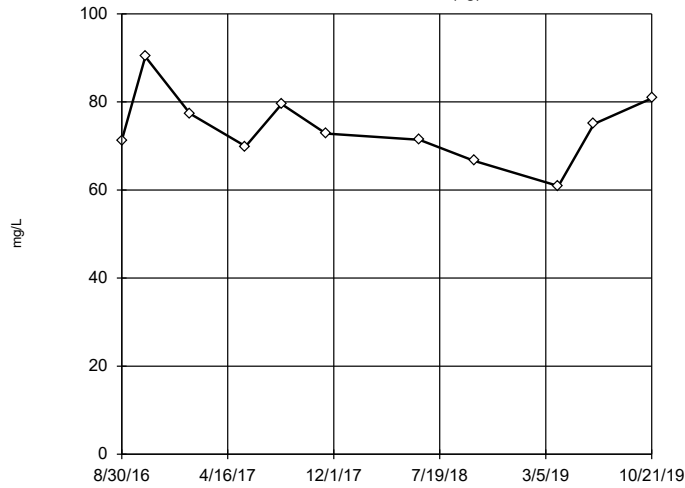
Tukey's Outlier Screening HGWC-124



n = 9
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cadmium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

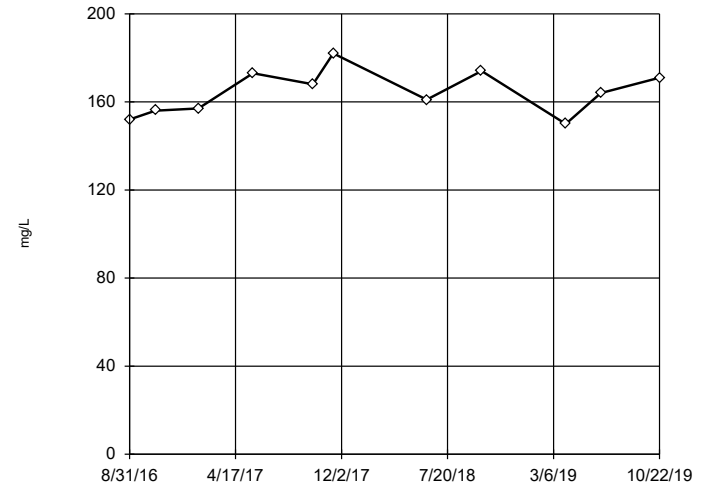
Tukey's Outlier Screening
HGWA-122 (bg)



n = 11
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 117, low cutoff = 47.51, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

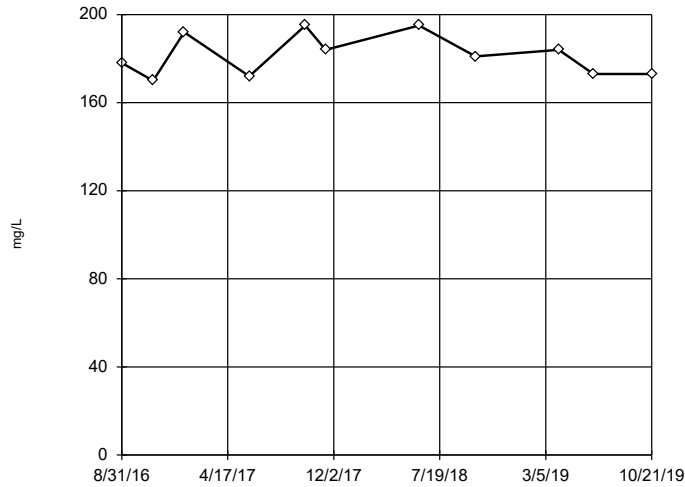
Tukey's Outlier Screening
HGWC-120



n = 11
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 235.9, low cutoff = 114.4, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

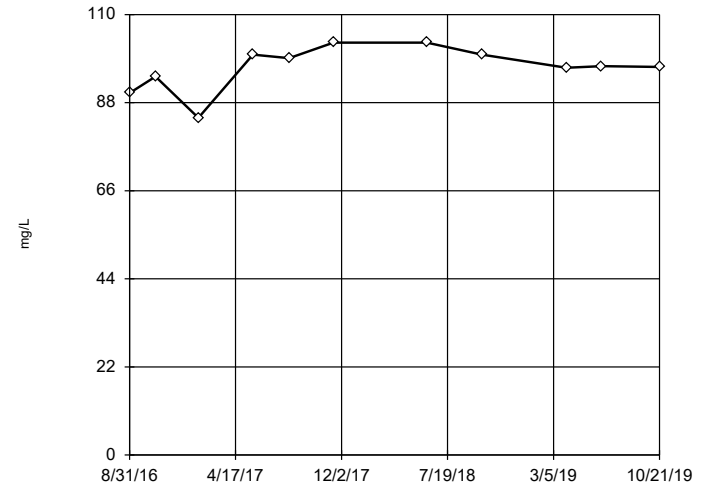
Tukey's Outlier Screening
HGWC-121A



n = 11
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 262.5, low cutoff = 126.6, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

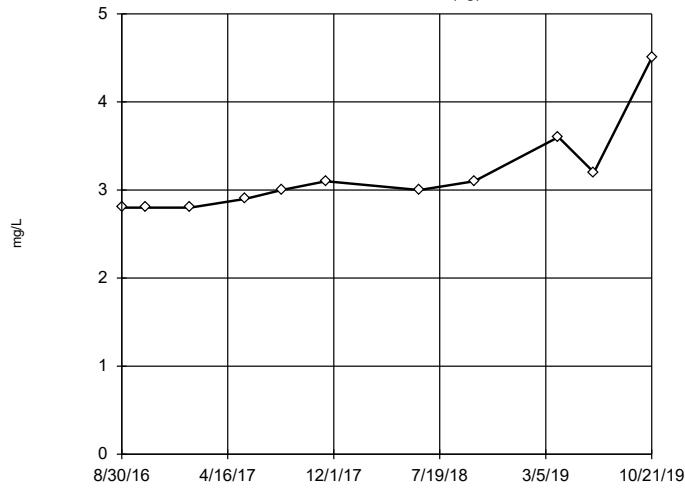
Tukey's Outlier Screening
HGWC-124



n = 11
No outliers found. Tukey's method selected by user.
Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
High cutoff = 110.9, low cutoff = -73, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

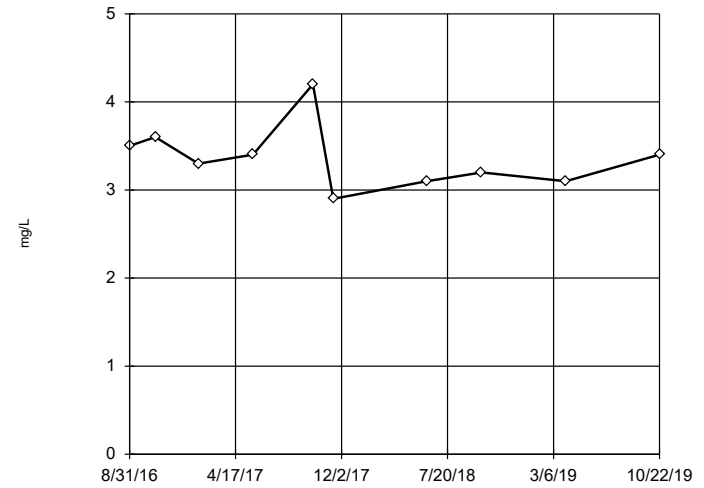
Tukey's Outlier Screening
HGWA-122 (bg)



n = 11
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 4.777, low cutoff = 1.876, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

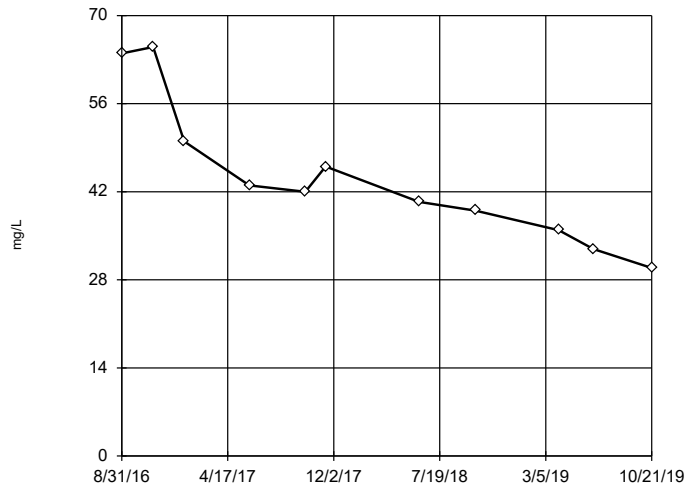
Tukey's Outlier Screening
HGWC-120



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 5.329, low cutoff = 2.065, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

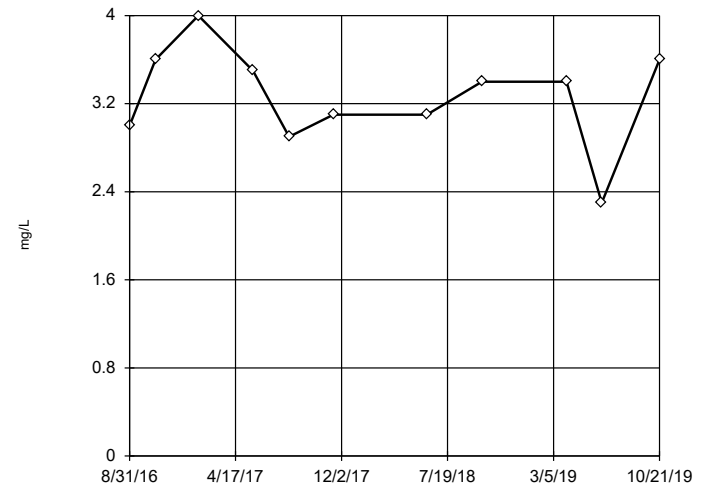
Tukey's Outlier Screening
HGWC-121A



n = 11
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 135.1, low cutoff = 13.29, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening
HGWC-124

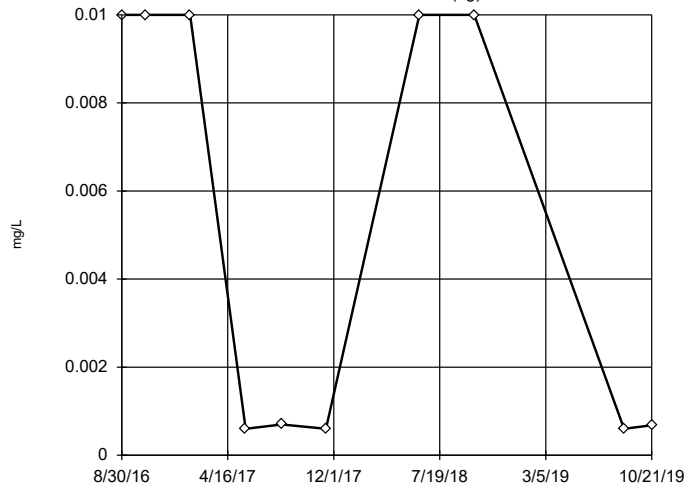


n = 11
No outliers found. Tukey's method selected by user.
Data were square transformed to achieve best W statistic (graph shown in original units).
High cutoff = 4.984, low cutoff = -1.697, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWA-122 (bg)



n = 10

No outliers found. Tukey's method selected by user.

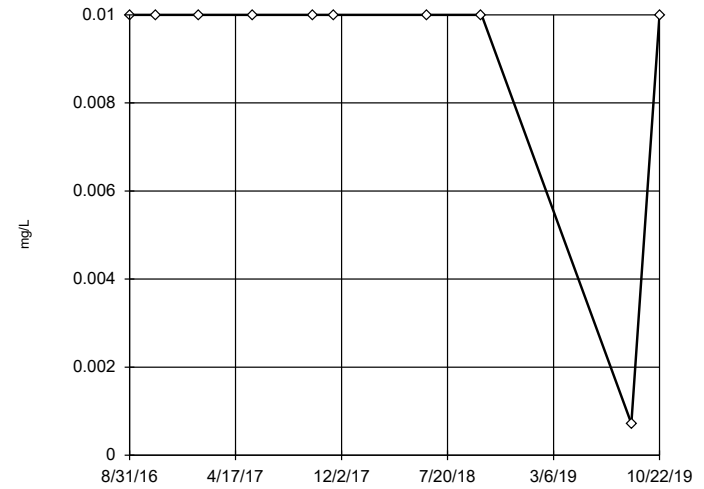
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 46.3, low cutoff = 1.3e-7, based on IQR multiplier of 3.

Constituent: Chromium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-120



n = 10

No outliers found. Tukey's method selected by user.

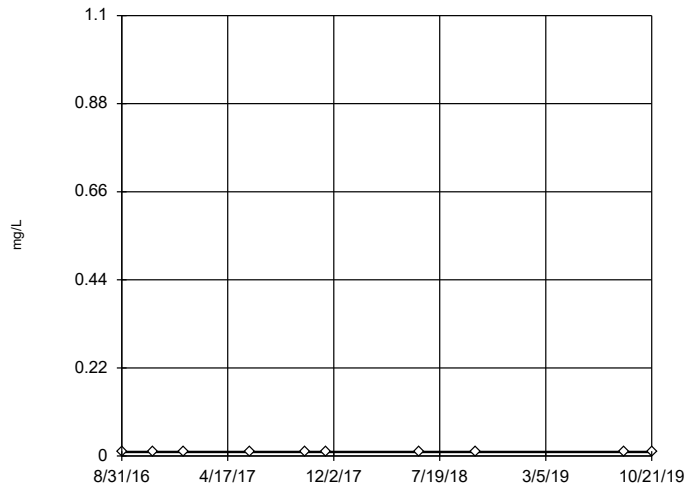
Data were square transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Chromium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-121A



n = 10

No outliers found. Tukey's method selected by user.

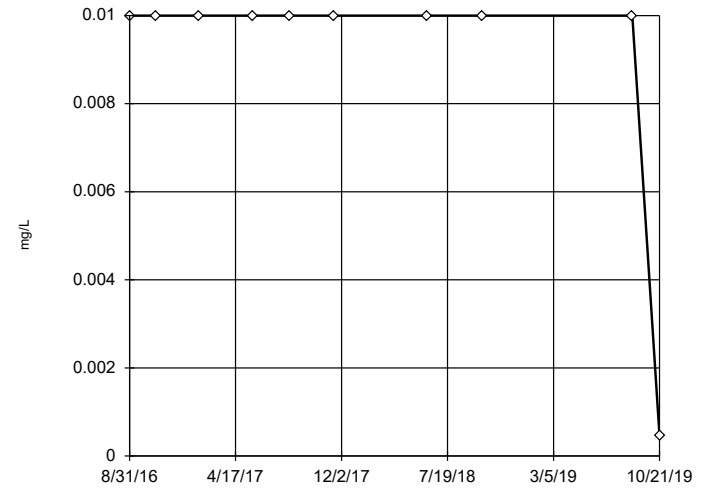
Data were square root transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Chromium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-124



n = 10

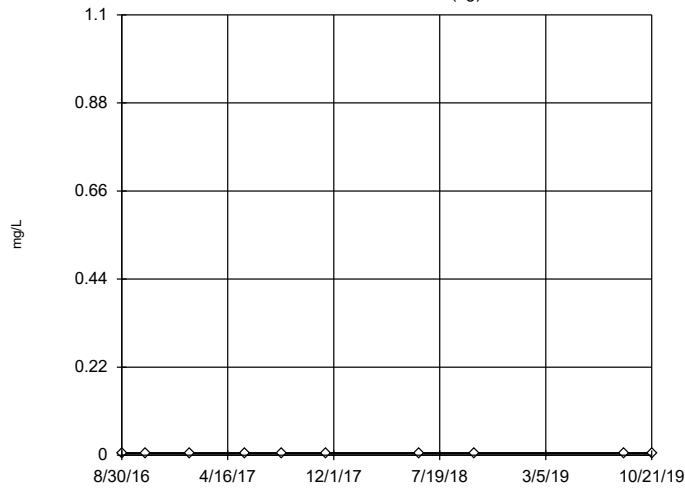
No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Chromium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

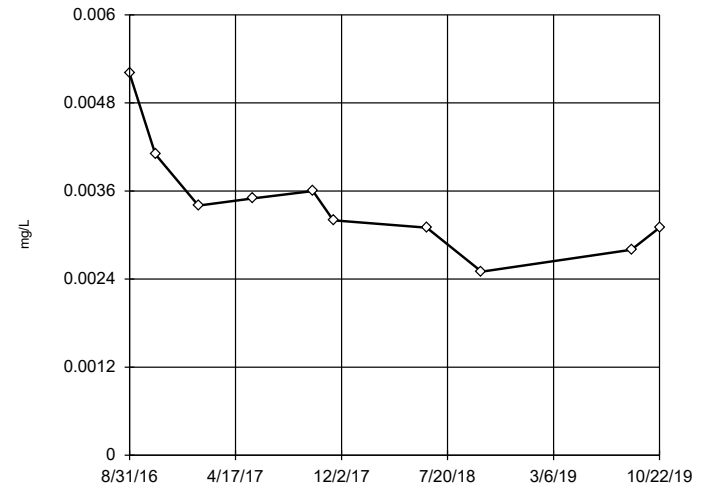
Tukey's Outlier Screening HGWA-122 (bg)



n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cobalt Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

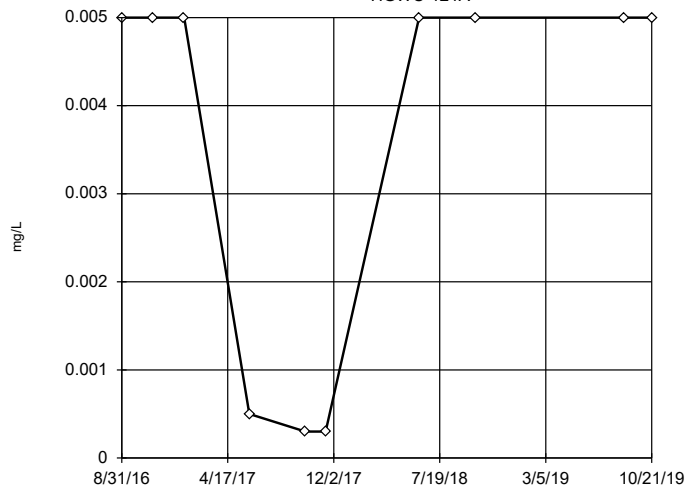
Tukey's Outlier Screening HGWC-120



n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.008519, low cutoff = 0.001329, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

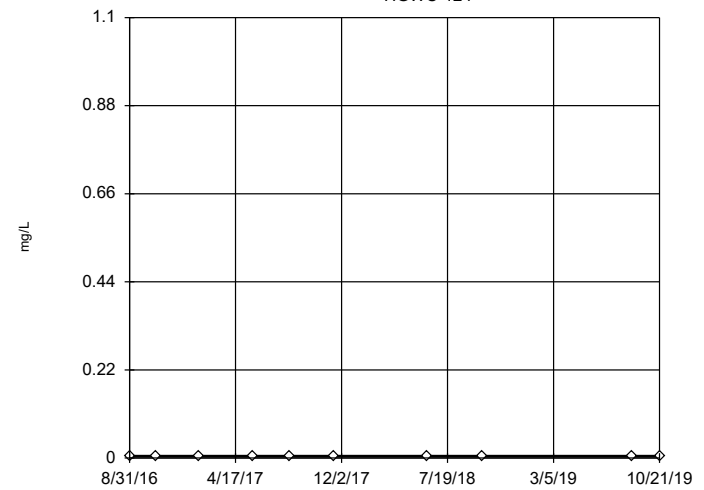
Tukey's Outlier Screening HGWC-121A



n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 10.76, low cutoff = 1.8e-7, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

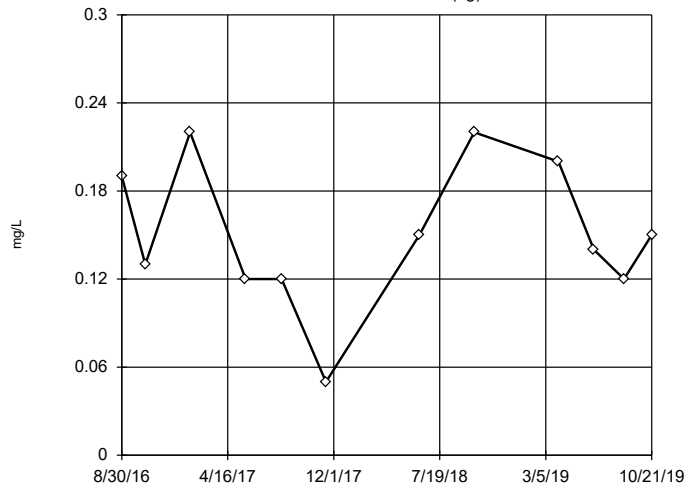
Tukey's Outlier Screening HGWC-124



n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cobalt Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

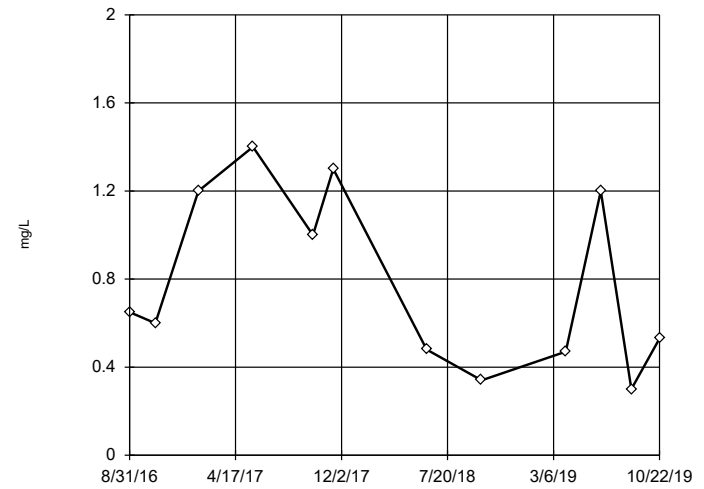
Tukey's Outlier Screening
HGWA-122 (bg)



n = 12
No outliers found. Tukey's method selected by user.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
High cutoff = 0.42, low cutoff = -0.105, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

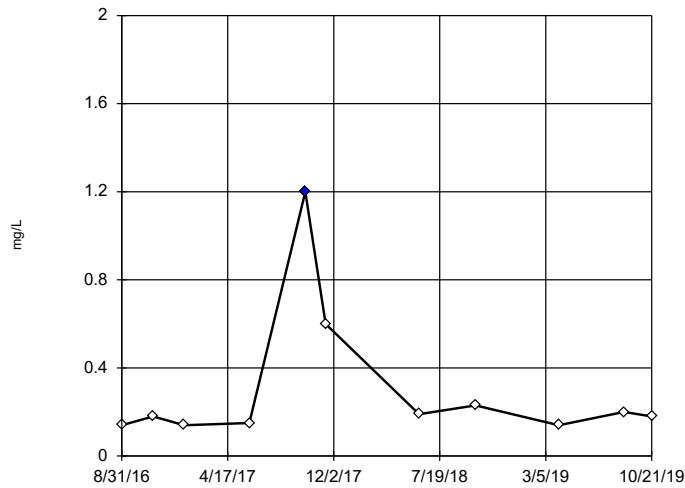
Tukey's Outlier Screening
HGWC-120



n = 12
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 19.35, low cutoff = 0.02945, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

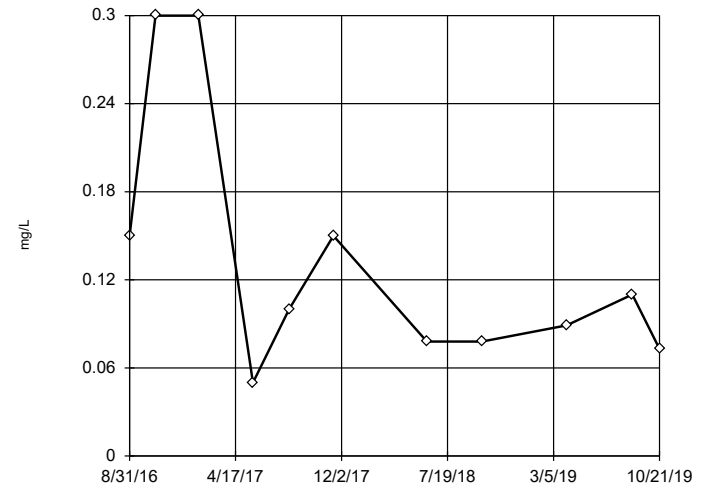
Tukey's Outlier Screening
HGWC-121A



n = 11
Outlier is drawn as solid. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.02, low cutoff = 0.03157, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening
HGWC-124

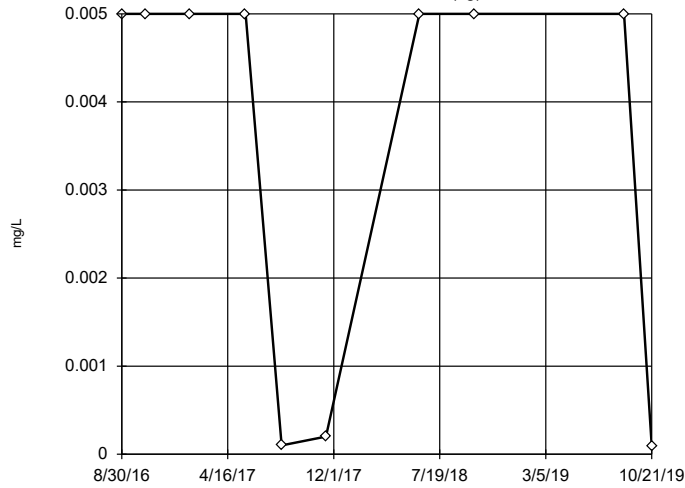


n = 11
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.067, low cutoff = 0.01097, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWA-122 (bg)

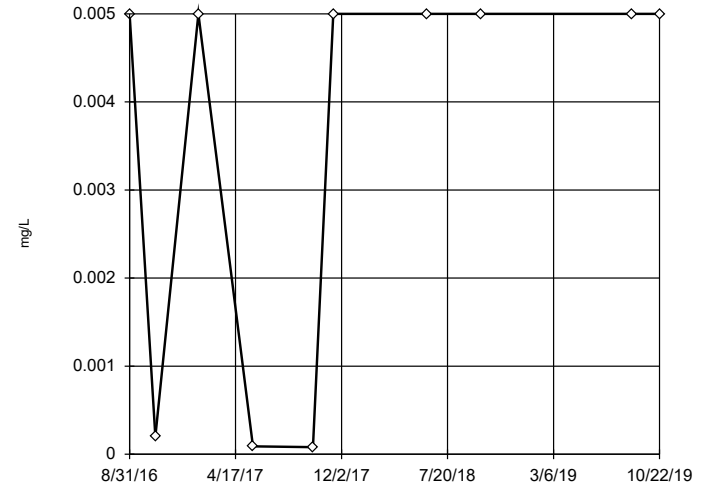


n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 221, low cutoff = 3.2e-9, based on IQR multiplier of 3.

Constituent: Lead Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-120

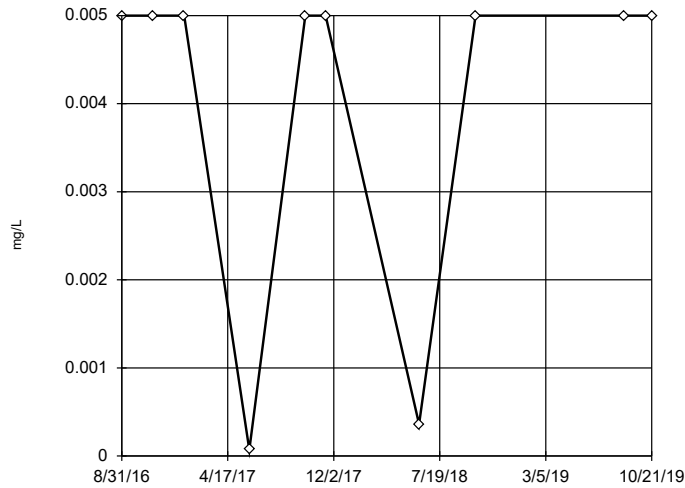


n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 258.8, low cutoff = 2.6e-9, based on IQR multiplier of 3.

Constituent: Lead Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-121A

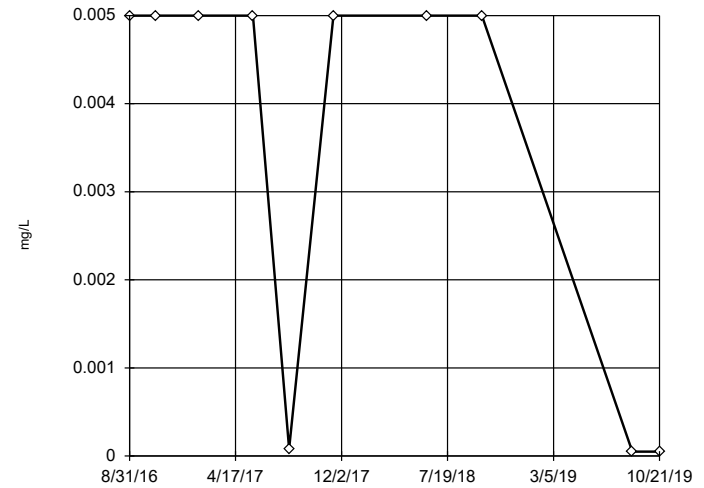


n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.2588, low cutoff = 0.00002592, based on IQR multiplier of 3.

Constituent: Lead Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

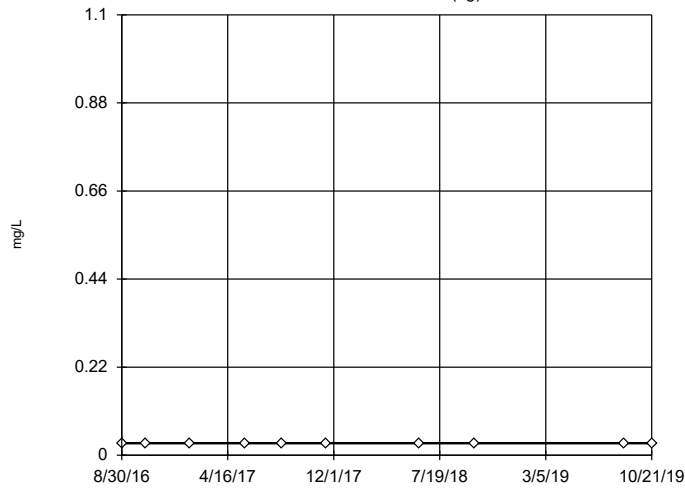
HGWC-124



n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 2547, low cutoff = 1.2e-10, based on IQR multiplier of 3.

Constituent: Lead Analysis Run 3/20/2020 3:15 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

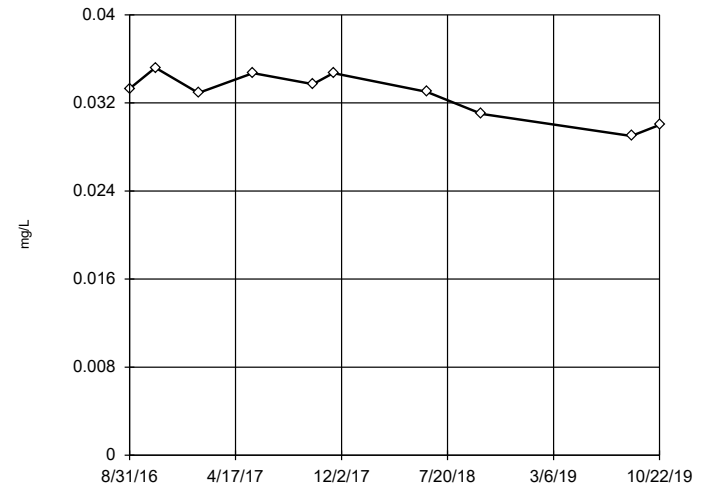
Tukey's Outlier Screening HGWA-122 (bg)



n = 10
No outliers found. Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Lithium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

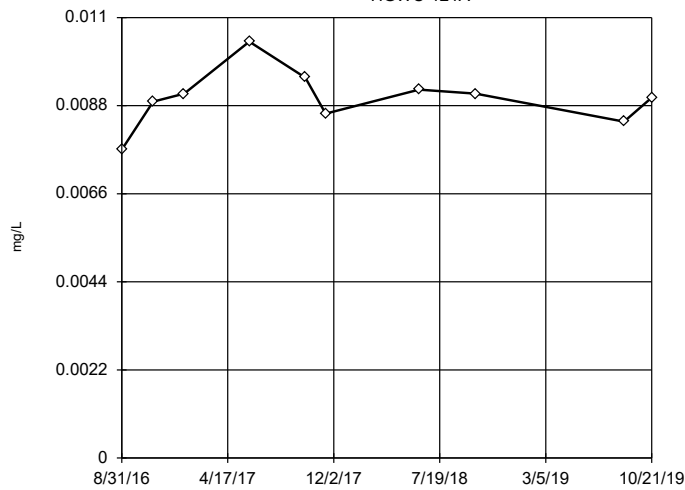
Tukey's Outlier Screening HGWC-120



n = 10
No outliers found. Tukey's method selected by user.
Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.04072, low cutoff = -0.03551, based on IQR multiplier of 3.

Constituent: Lithium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

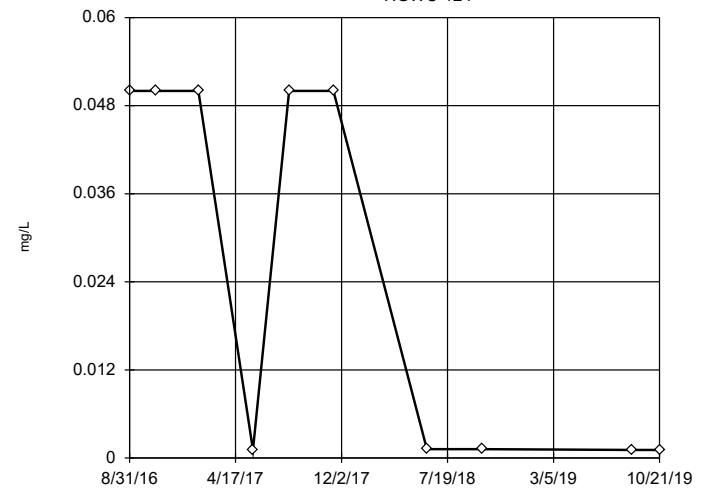
Tukey's Outlier Screening HGWC-121A



n = 10
No outliers found. Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.01223, low cutoff = 0.006263, based on IQR multiplier of 3.

Constituent: Lithium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

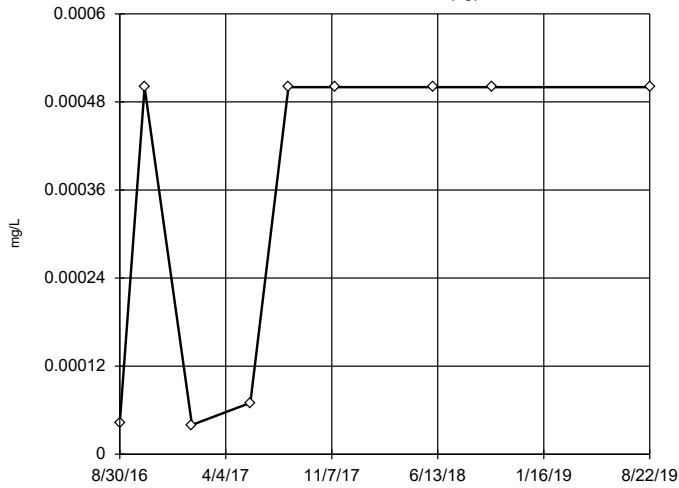
Tukey's Outlier Screening HGWC-124



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 4696, low cutoff = 1.2e-8, based on IQR multiplier of 3.

Constituent: Lithium Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

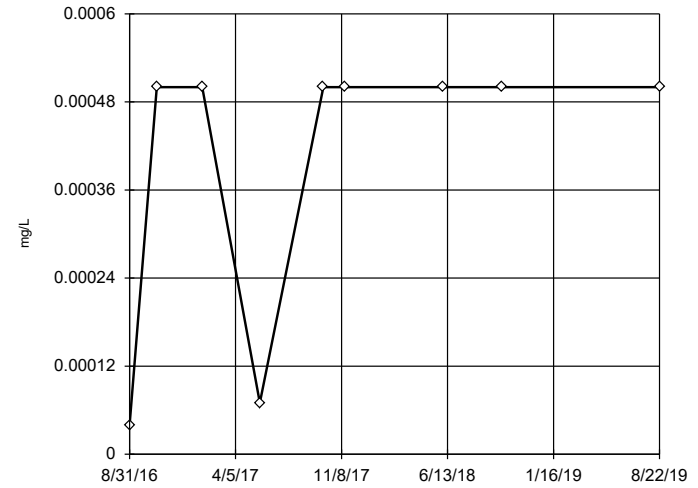
Tukey's Outlier Screening
HGWA-122 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.3785, low cutoff = 7.2e-8, based on IQR multiplier of 3.

Constituent: Mercury Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

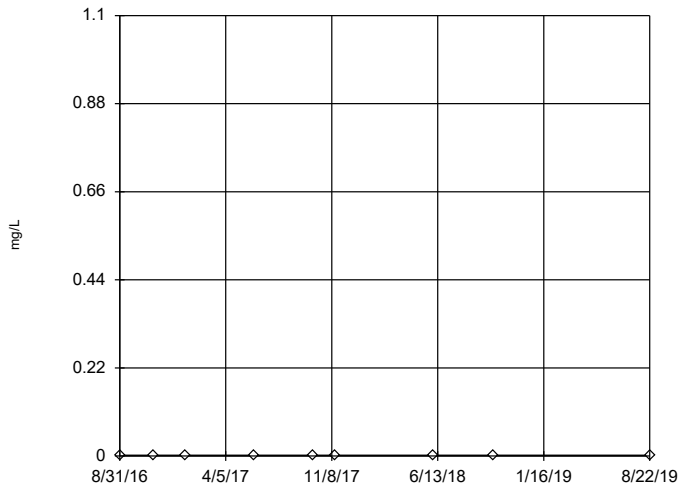
Tukey's Outlier Screening
HGWC-120



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.009545, low cutoff = 0.0000098, based on IQR multiplier of 3.

Constituent: Mercury Analysis Run 3/20/2020 3:15 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

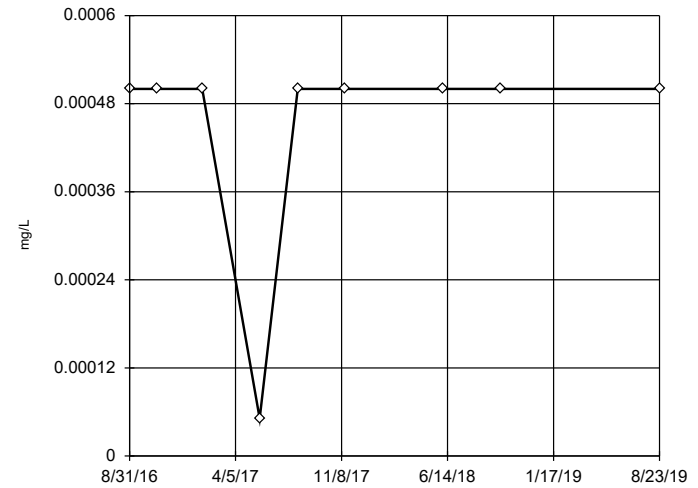
Tukey's Outlier Screening
HGWC-121A



n = 9
No outliers found. Tukey's method selected by user.
Data were square root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Mercury Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening
HGWC-124

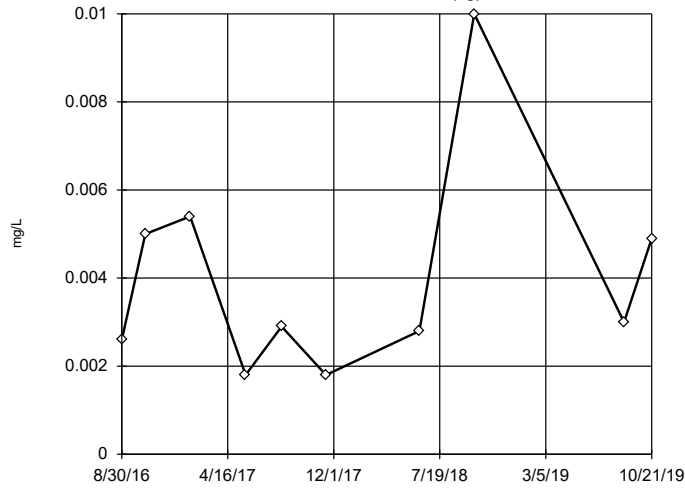


n = 9
No outliers found. Tukey's method selected by user.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Mercury Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWA-122 (bg)

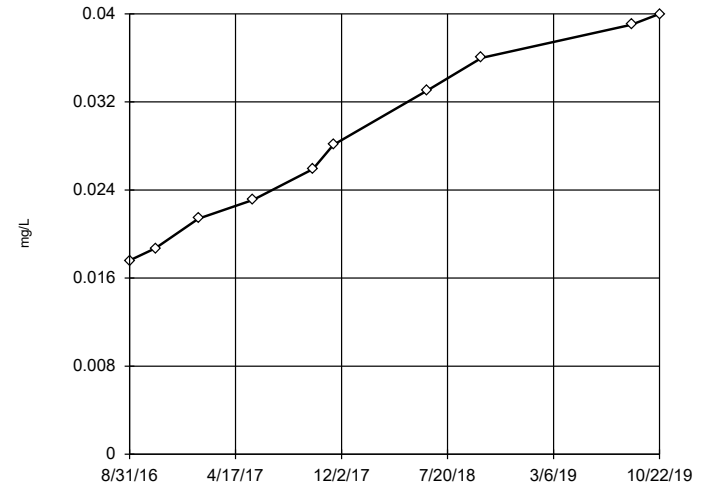


n = 10
 No outliers found. Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.072, low cutoff = 0.0001561, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-120

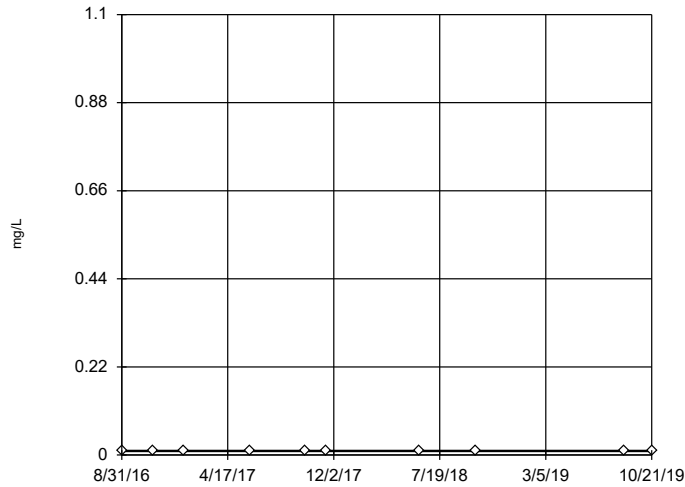


n = 10
 No outliers found. Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.2462, low cutoff = 0.003044, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-121A

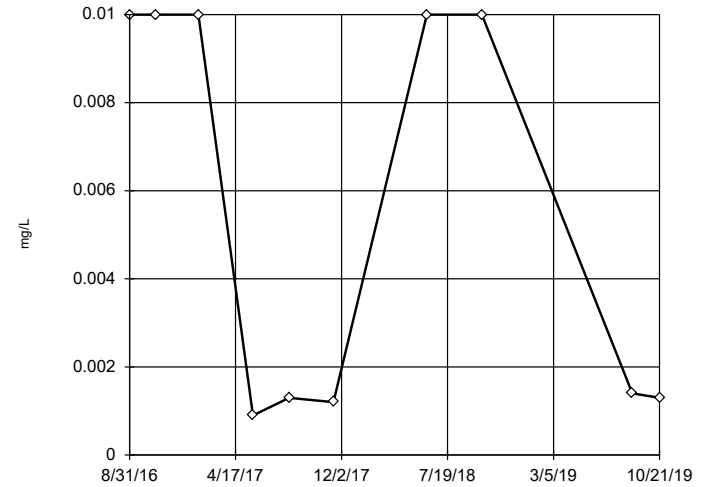


n = 10
 No outliers found. Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Molybdenum Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-124

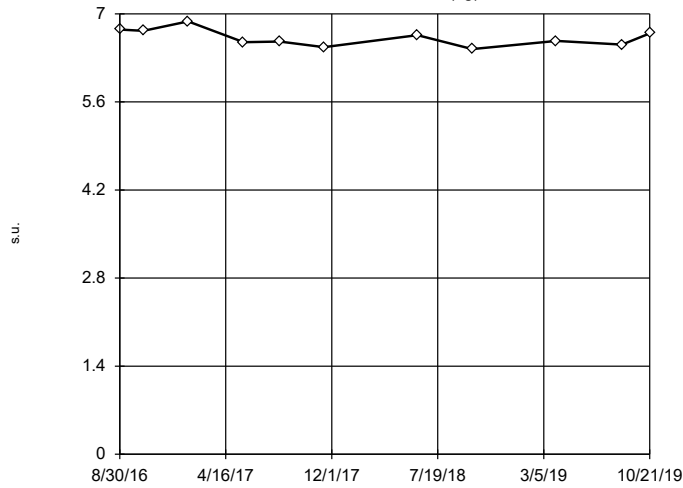


n = 10
 No outliers found. Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 5.132, low cutoff = 0.000002434, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWA-122 (bg)

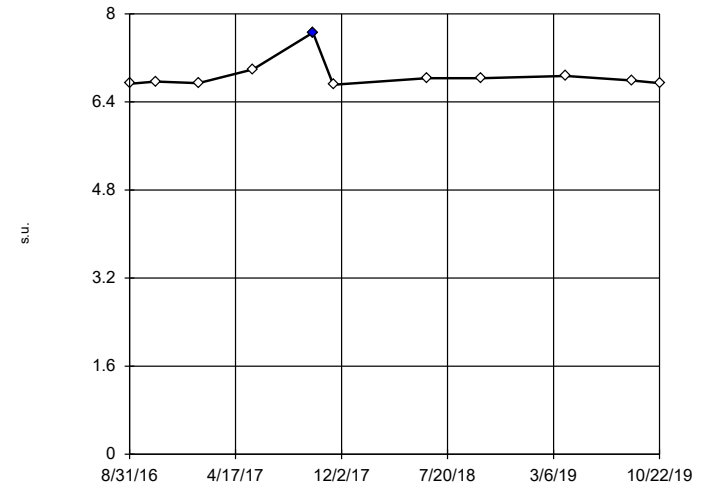


n = 11
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 7.436, low cutoff = 5.892, based on IQR multiplier of 3.

Constituent: pH Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-120

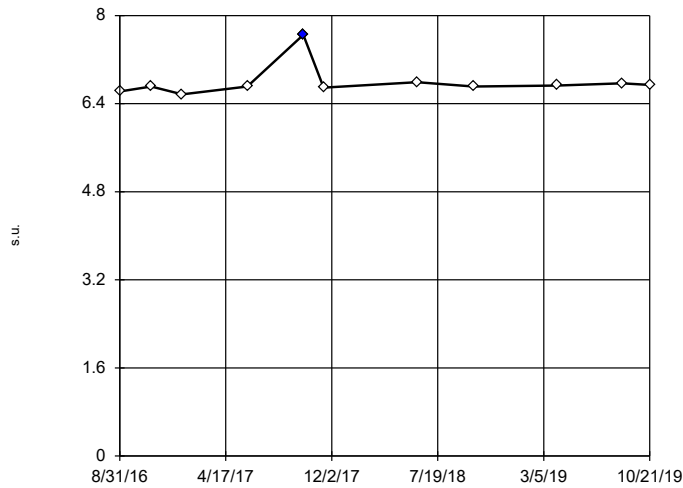


n = 11
 Outlier is drawn as solid. Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 7.275, low cutoff = 6.365, based on IQR multiplier of 3.

Constituent: pH Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-121A

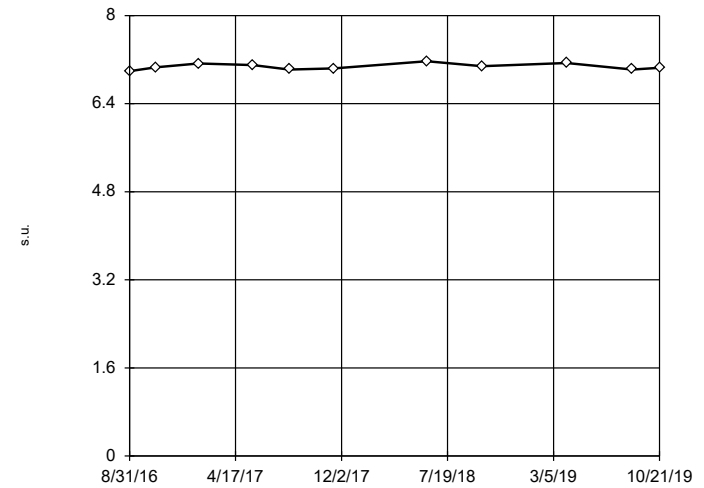


n = 11
 Outlier is drawn as solid. Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 7.016, low cutoff = 6.456, based on IQR multiplier of 3.

Constituent: pH Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-124

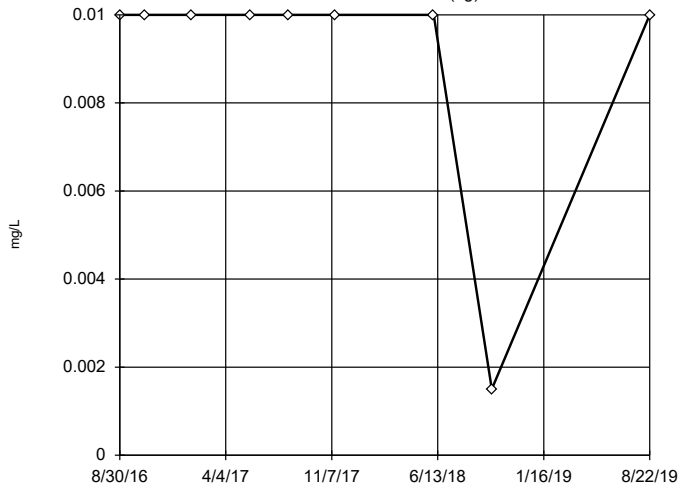


n = 11
 No outliers found. Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 7.47, low cutoff = 6.7, based on IQR multiplier of 3.

Constituent: pH Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWA-122 (bg)

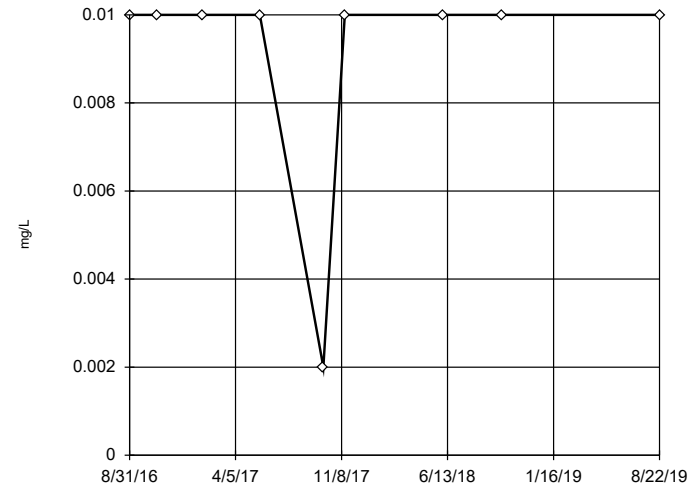


n = 9
 No outliers found. Tukey's method selected by user.
 Data were x*5 transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Selenium Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-120

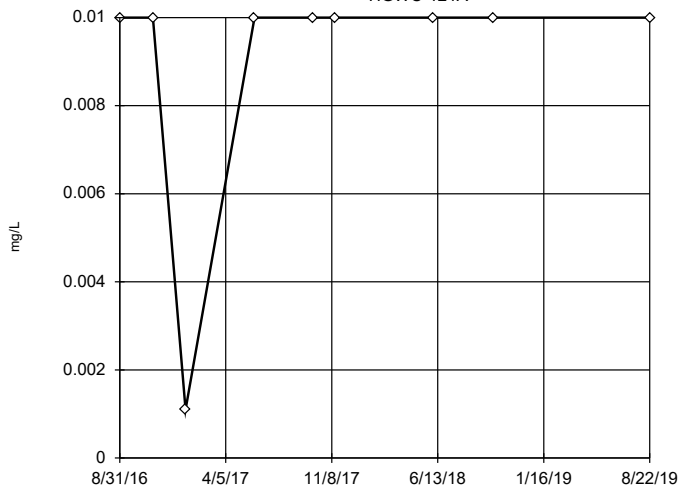


n = 9
 No outliers found. Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Selenium Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-121A

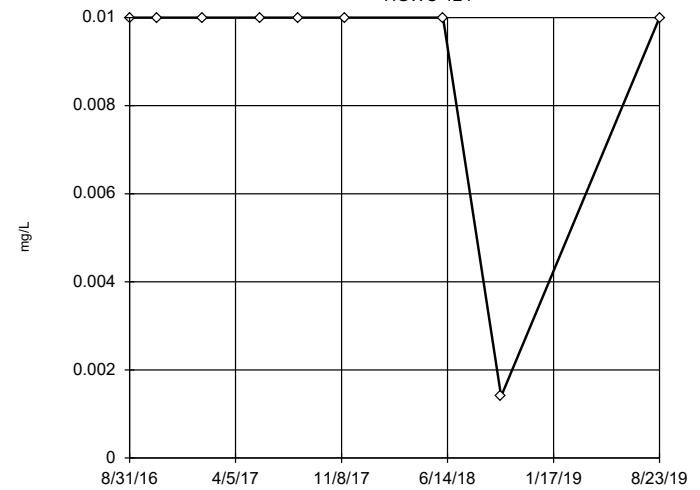


n = 9
 No outliers found. Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Selenium Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-124

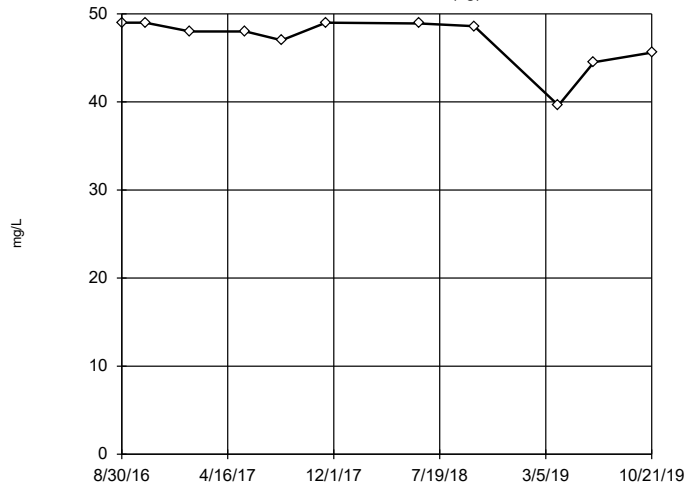


n = 9
 No outliers found. Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Selenium Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWA-122 (bg)

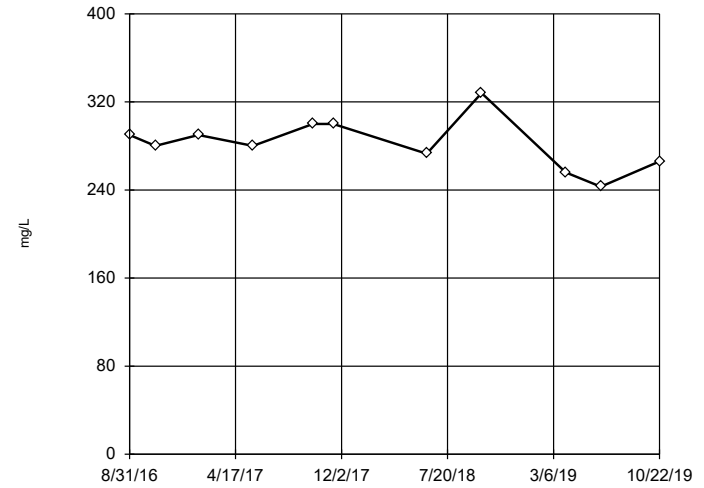


n = 11
 No outliers found.
 Tukey's method selected by user.
 Data were x*6 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 55.23, low cutoff = 42.09, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-120

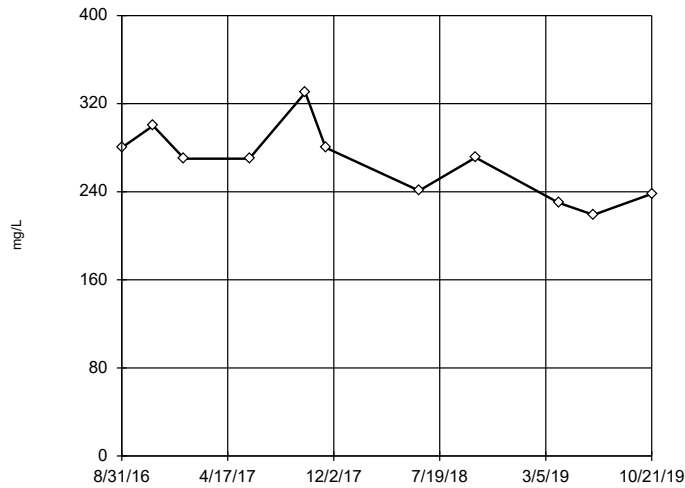


n = 11
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 430.4, low cutoff = 185.4, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

HGWC-121A

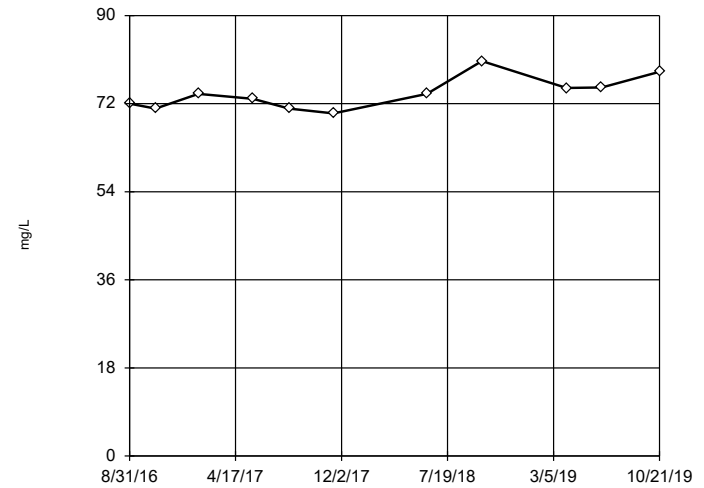


n = 11
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 455.9, low cutoff = 146.2, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening

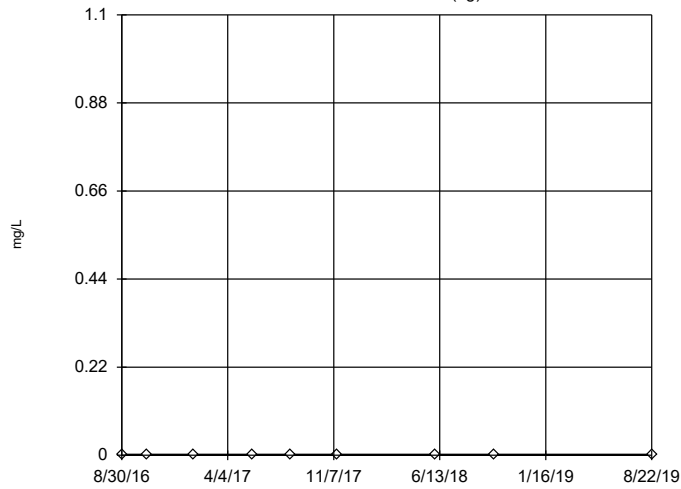
HGWC-124



n = 11
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 89.83, low cutoff = 59.52, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 3/20/2020 3:16 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

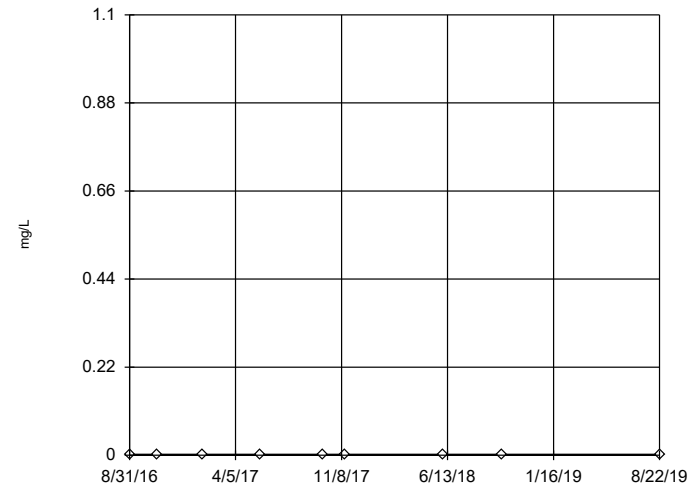
Tukey's Outlier Screening HGWA-122 (bg)



n = 9
No outliers found.
Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

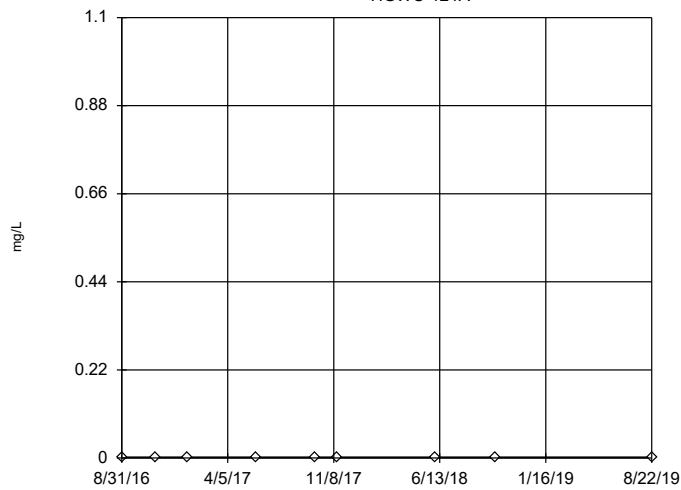
Tukey's Outlier Screening HGWC-120



n = 9
No outliers found.
Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

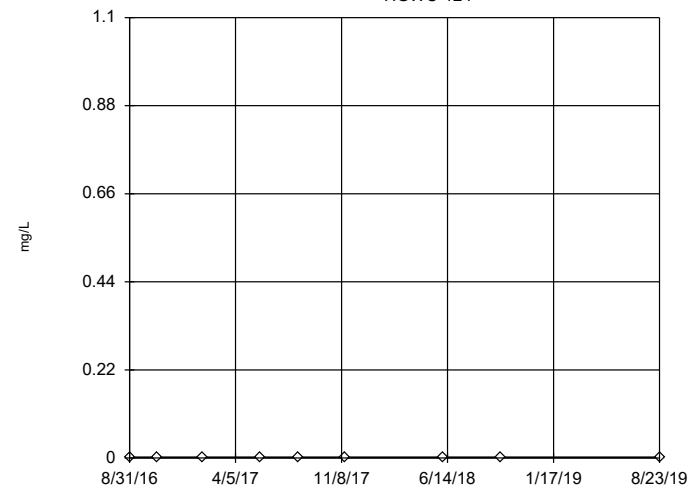
Tukey's Outlier Screening HGWC-121A



n = 9
No outliers found.
Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

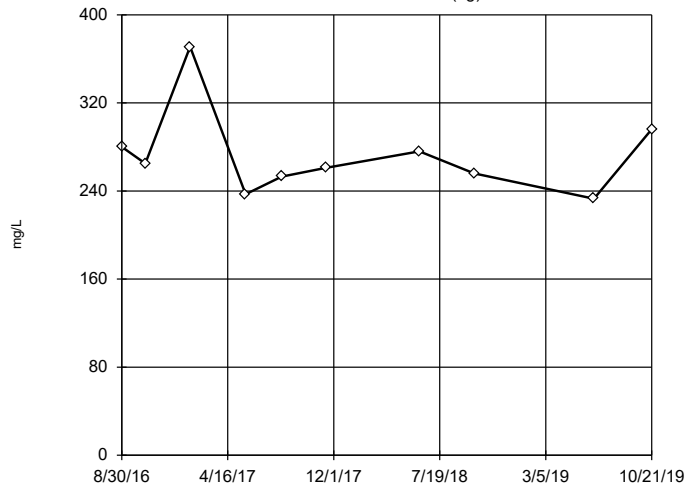
Tukey's Outlier Screening HGWC-124



n = 9
No outliers found.
Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

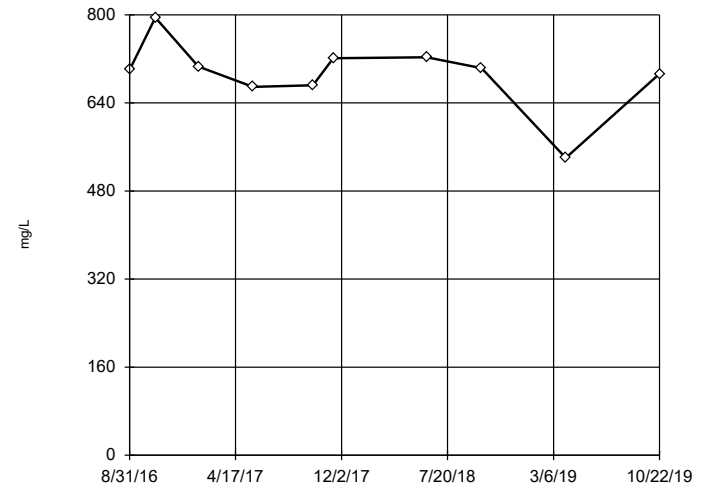
Tukey's Outlier Screening
HGWA-122 (bg)



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 467.8, low cutoff = 150.7, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

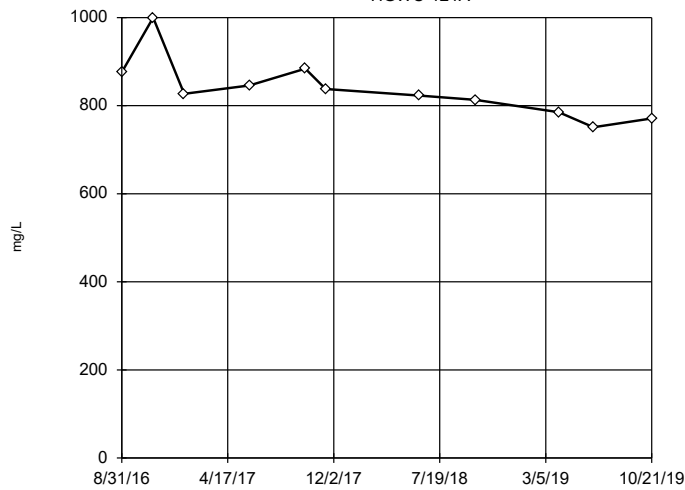
Tukey's Outlier Screening
HGWC-120



n = 10
No outliers found. Tukey's method selected by user.
Data were x^4 transformed to achieve best W statistic (graph shown in original units).
High cutoff = 832.6, low cutoff = -286.6, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

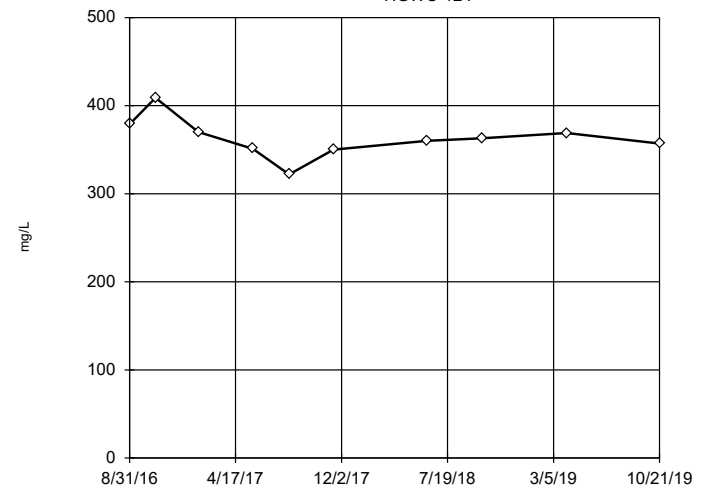
Tukey's Outlier Screening
HGWC-121A



n = 11
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1217, low cutoff = 564.9, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

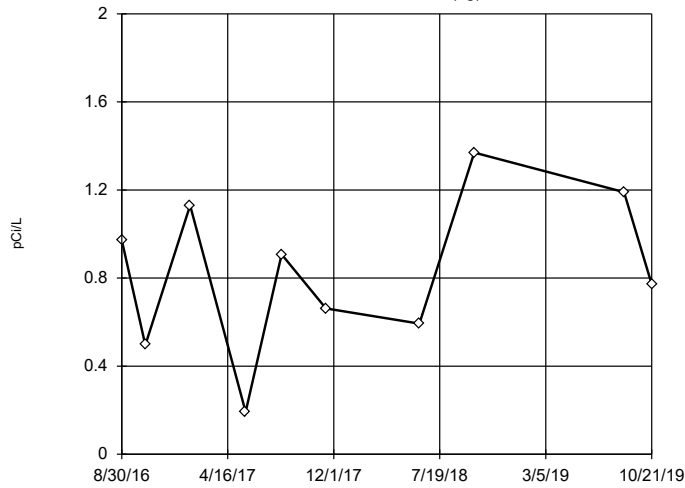
Tukey's Outlier Screening
HGWC-124



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 456.7, low cutoff = 287.4, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

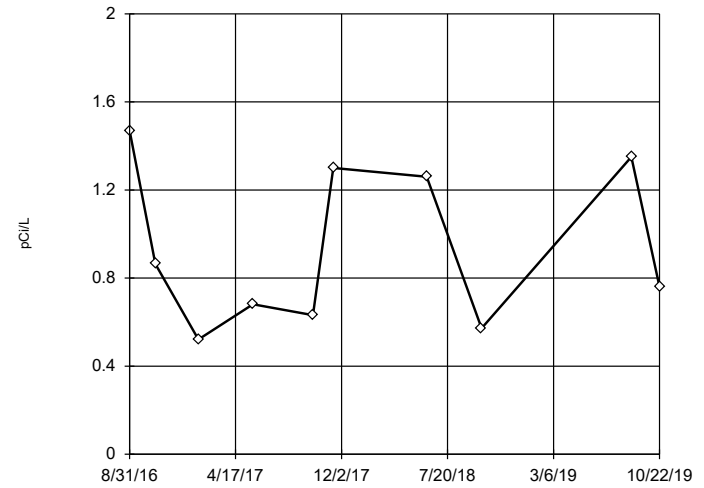
Tukey's Outlier Screening HGWA-122 (bg)



n = 10
No outliers found. Tukey's method selected by user.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
High cutoff = 3.007, low cutoff = -1.302, based on IQR multiplier of 3.

Constituent: Total Radium Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

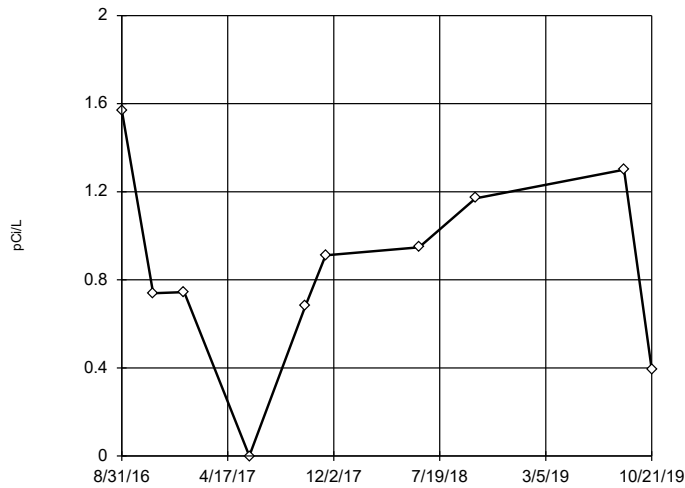
Tukey's Outlier Screening HGWC-120



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 14.17, low cutoff = 0.05621, based on IQR multiplier of 3.

Constituent: Total Radium Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

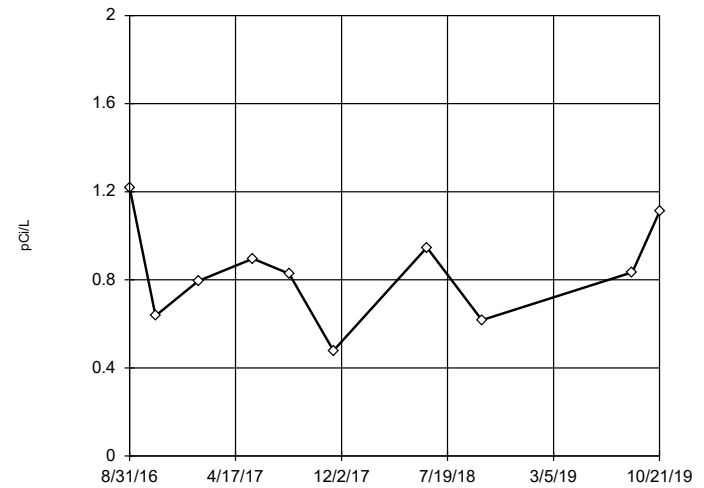
Tukey's Outlier Screening HGWC-121A



n = 10
No outliers found. Tukey's method selected by user.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
High cutoff = 3.331, low cutoff = -1.559, based on IQR multiplier of 3.

Constituent: Total Radium Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Tukey's Outlier Screening HGWC-124

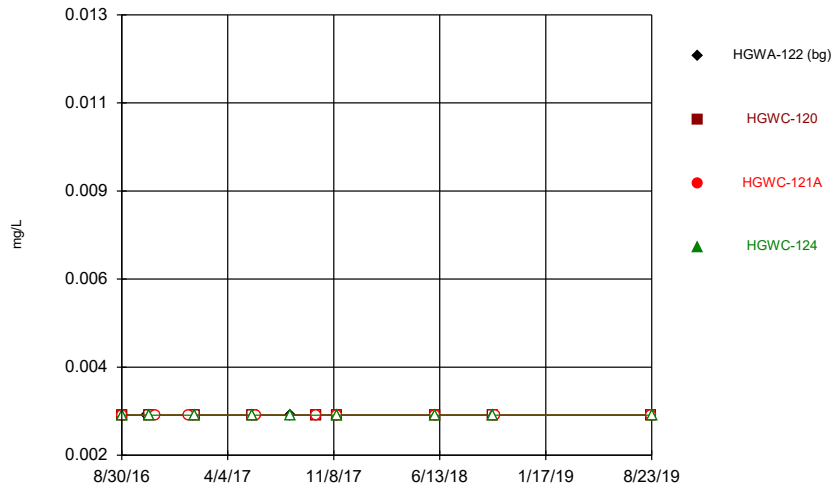


n = 10
No outliers found. Tukey's method selected by user.
Data were square root transformed to achieve best W statistic (graph shown in original units).
High cutoff = 2.816, low cutoff = 0.01617, based on IQR multiplier of 3.

Constituent: Total Radium Analysis Run 3/20/2020 3:16 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

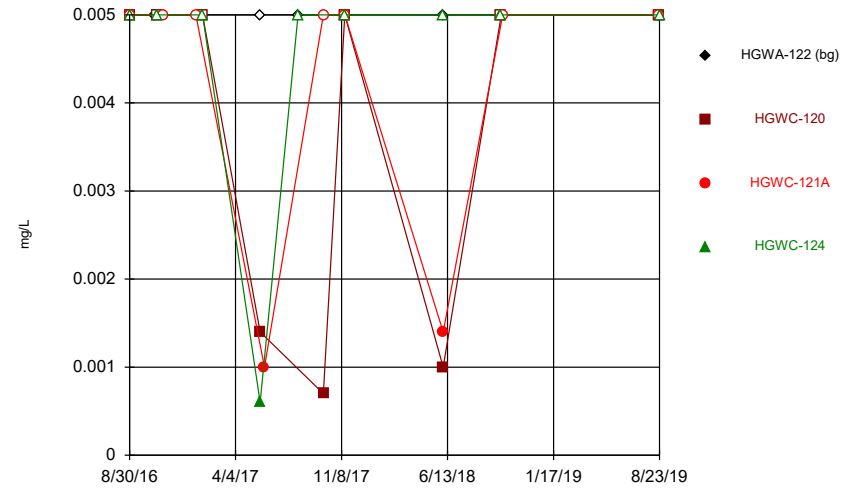
TIME SERIES

Time Series



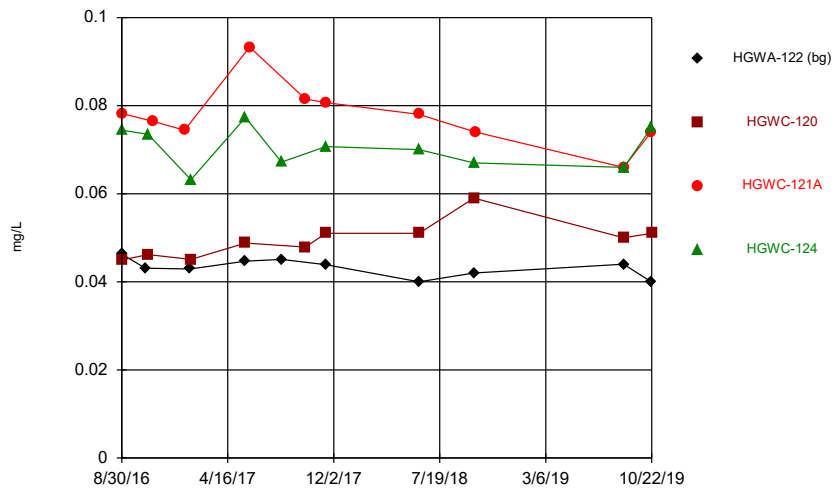
Constituent: Antimony Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



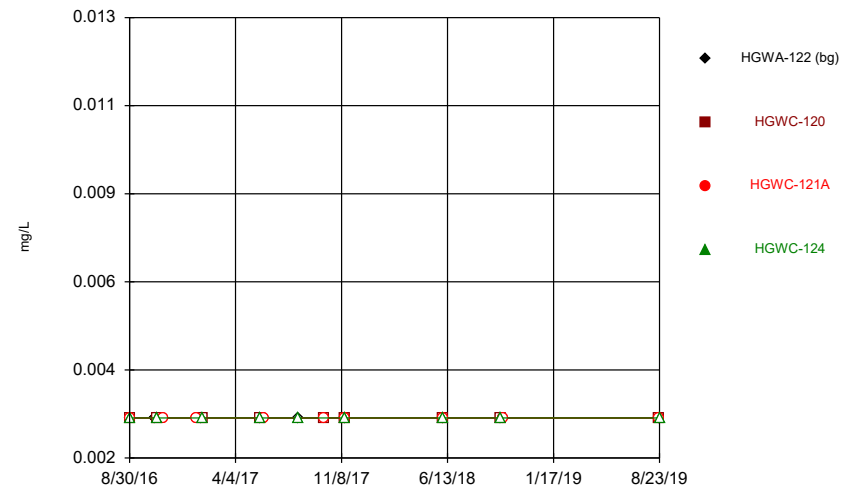
Constituent: Arsenic Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



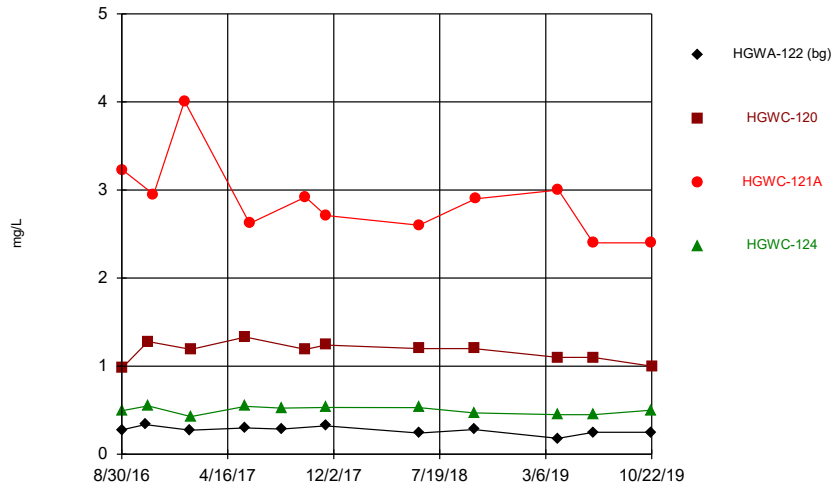
Constituent: Barium Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



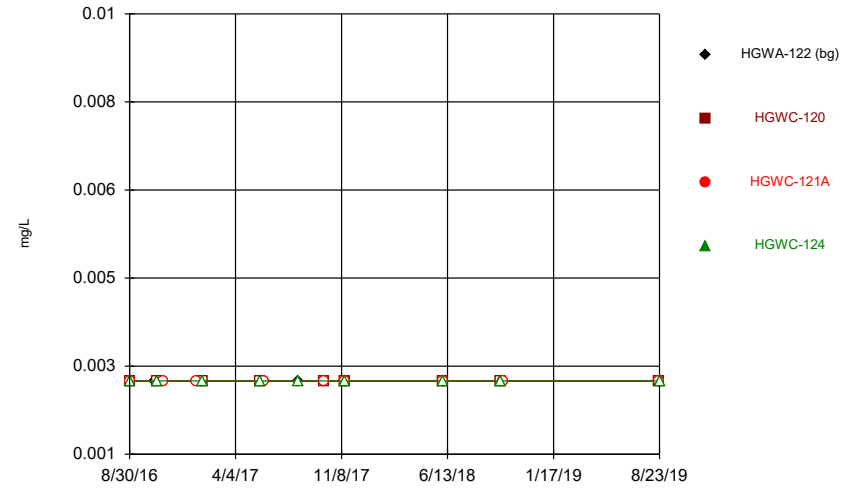
Constituent: Beryllium Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



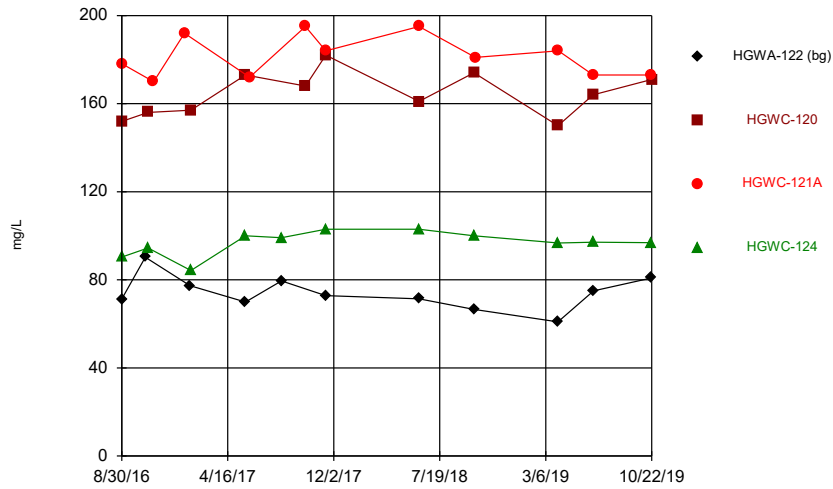
Constituent: Boron Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



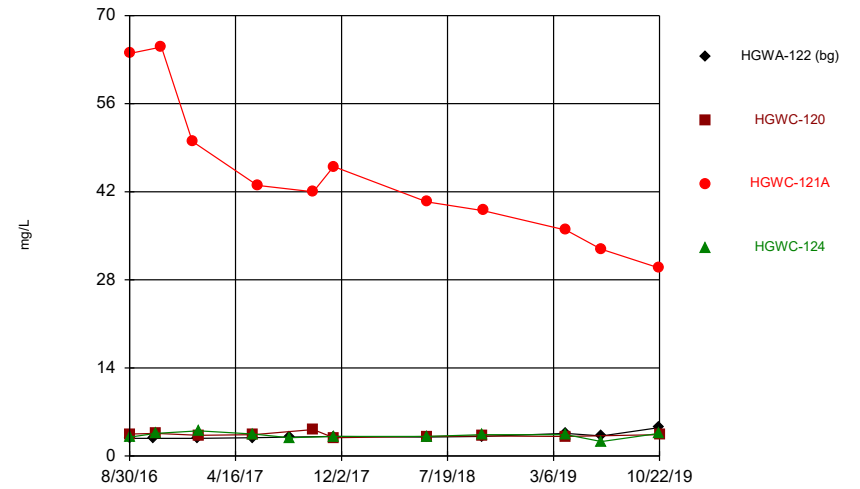
Constituent: Cadmium Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



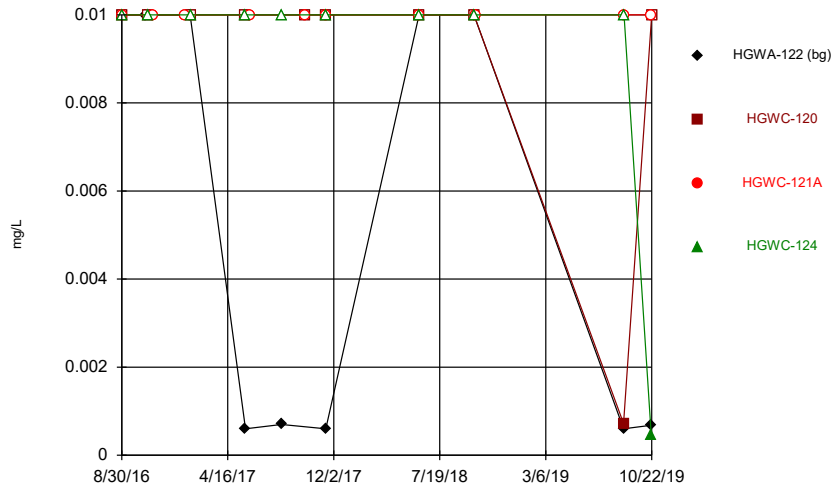
Constituent: Calcium Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



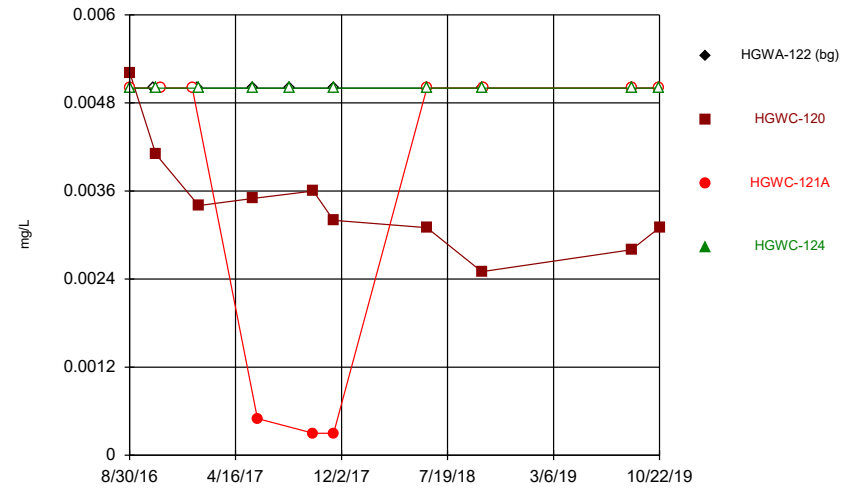
Constituent: Chloride Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



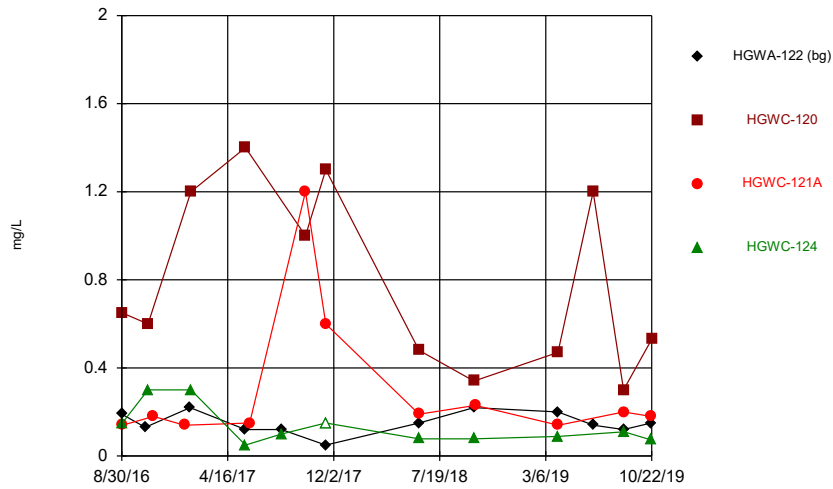
Constituent: Chromium Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



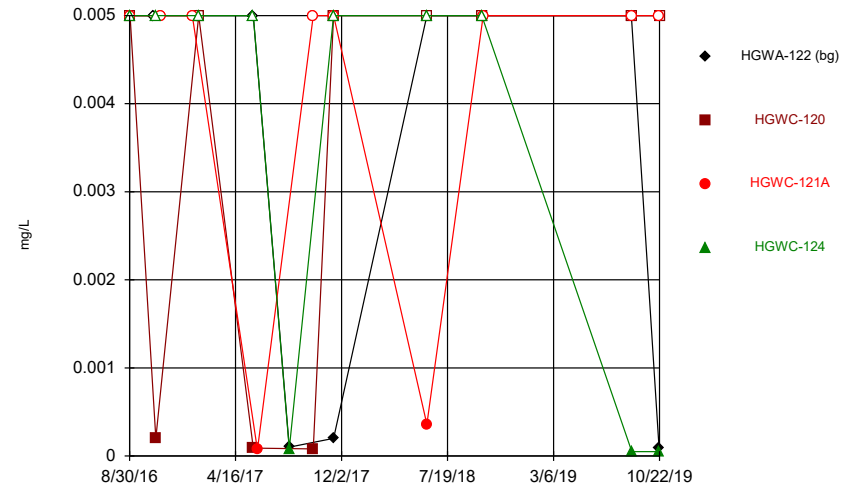
Constituent: Cobalt Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



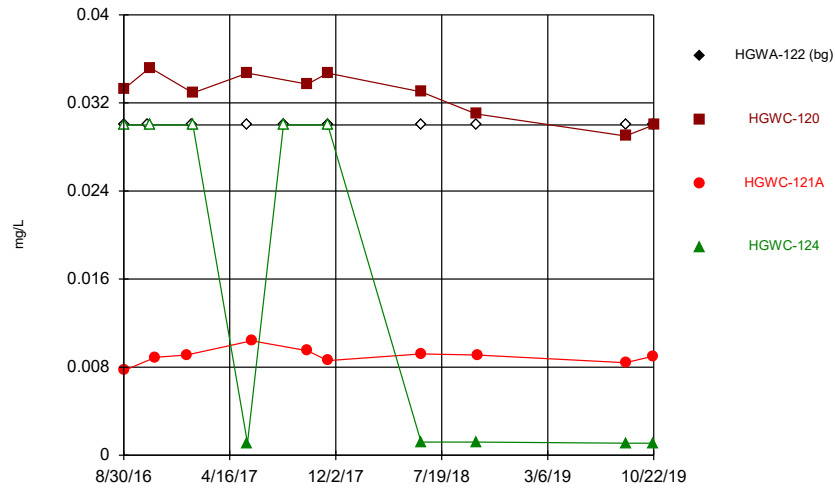
Constituent: Fluoride Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



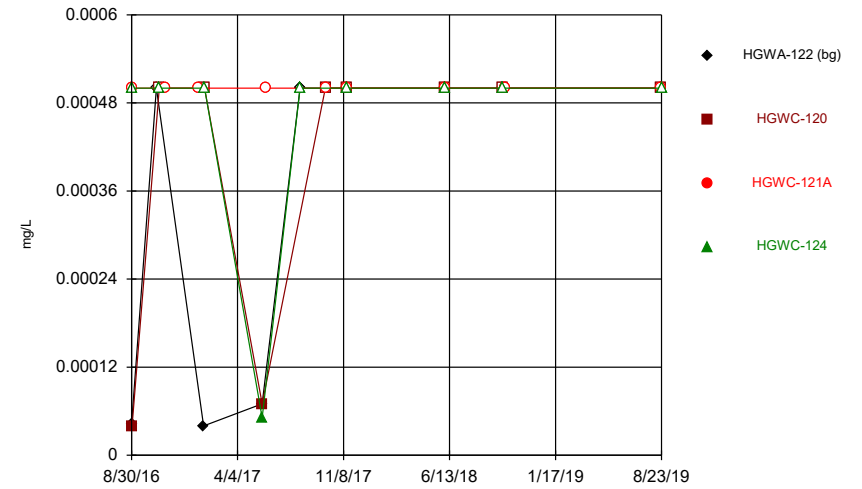
Constituent: Lead Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



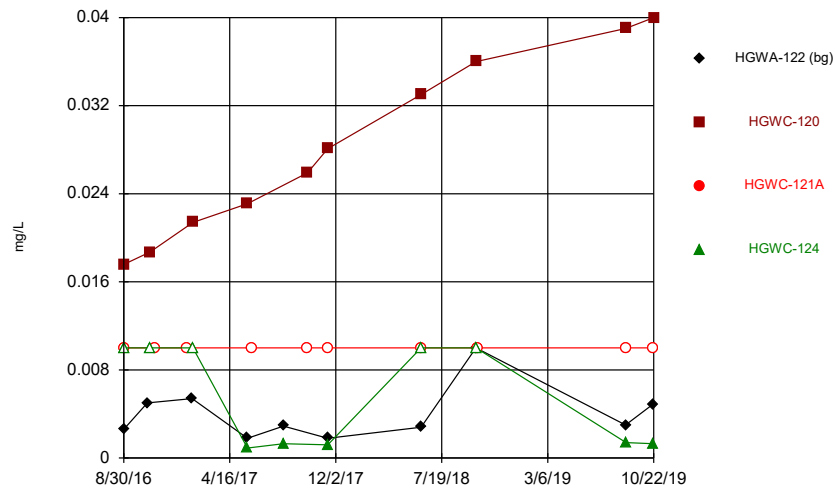
Constituent: Lithium Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



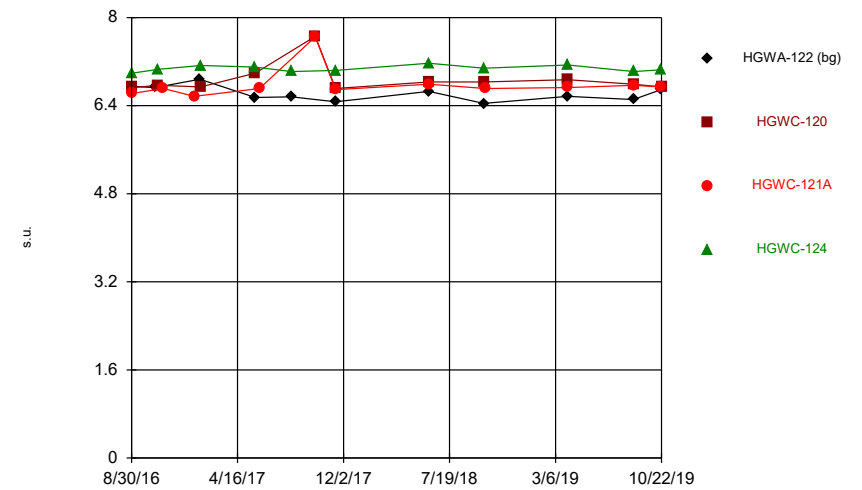
Constituent: Mercury Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



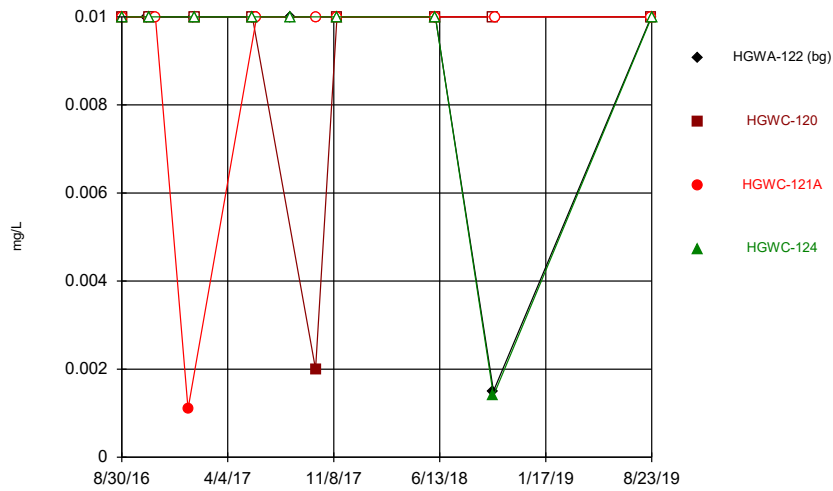
Constituent: Molybdenum Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



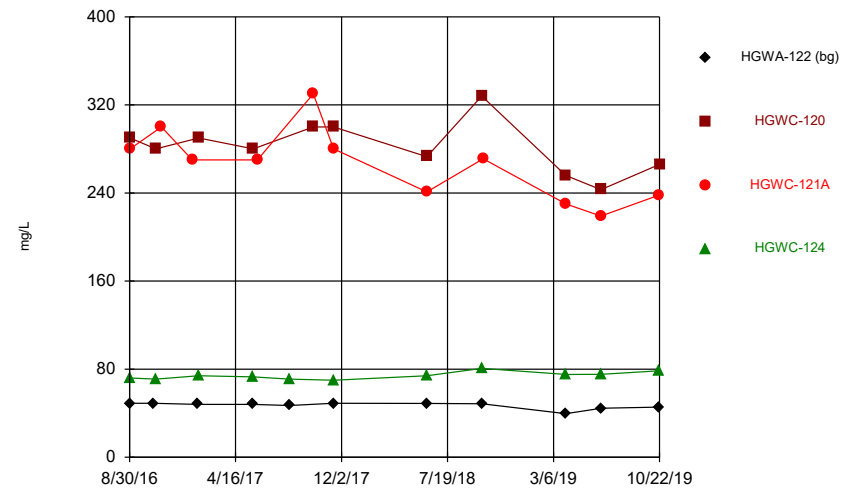
Constituent: pH Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



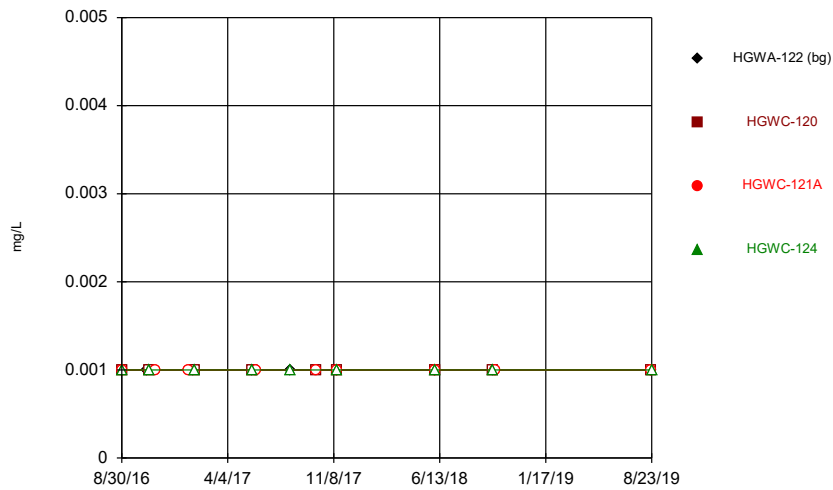
Constituent: Selenium Analysis Run 3/20/2020 3:21 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



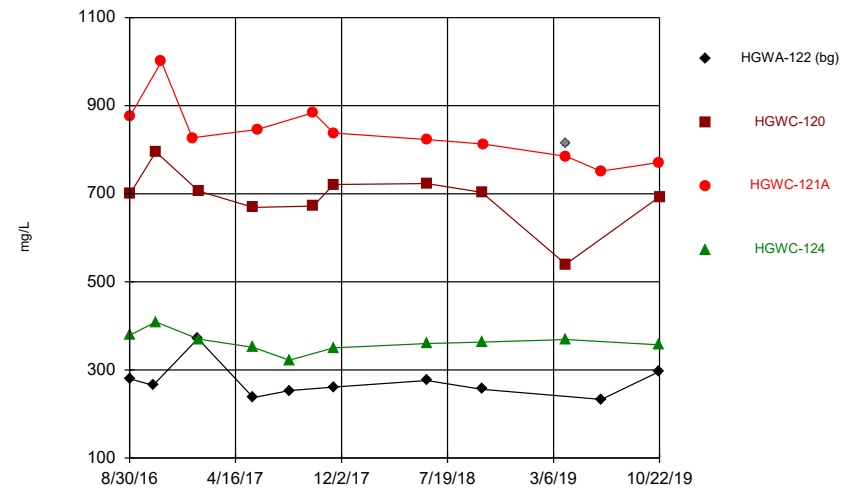
Constituent: Sulfate Analysis Run 3/20/2020 3:21 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



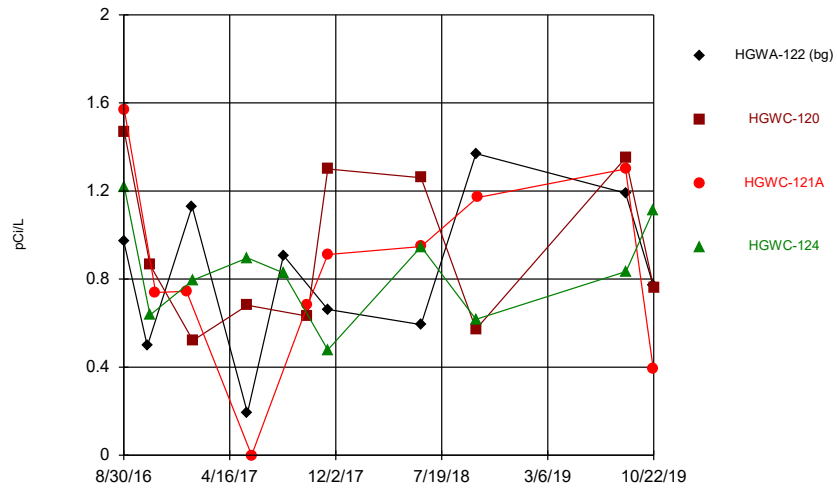
Constituent: Thallium Analysis Run 3/20/2020 3:21 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



Constituent: Total Dissolved Solids Analysis Run 3/20/2020 3:21 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Time Series



Constituent: Total Radium Analysis Run 3/20/2020 3:21 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

APPENDIX III

Table 1
 Assessment Monitoring Interwell Prediction Limit Comparison
 Plant Hammond AP-3, Floyd County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Oct 21-22, 2019
Purpose of Sampling Event:				Assessment
Boron (mg/L)	HGWC-120	0.36	-	1.0
Boron (mg/L)	HGWC-121A	0.36	-	2.4
Boron (mg/L)	HGWC-124	0.36	-	0.50
Calcium (mg/L)	HGWC-120	91.0	-	171
Calcium (mg/L)	HGWC-121A	91.0	-	173
Calcium (mg/L)	HGWC-124	91.0	-	96.9
Chloride (mg/L)	HGWC-120	4.5	-	3.4
Chloride (mg/L)	HGWC-121A	4.5	-	29.9
Chloride (mg/L)	HGWC-124	4.5	-	3.6
Fluoride (mg/L)	HGWC-120	0.25	-	0.53
Fluoride (mg/L)	HGWC-121A	0.25	-	0.18 J
Fluoride (mg/L)	HGWC-124	0.25	-	0.073 J
pH (s.u.)	HGWC-120	6.9	6.3	6.7
pH (s.u.)	HGWC-121A	6.9	6.3	6.7
pH (s.u.)	HGWC-124	6.9	6.3	7.1
Sulfate (mg/L)	HGWC-120	51.6	-	266
Sulfate (mg/L)	HGWC-121A	51.6	-	238
Sulfate (mg/L)	HGWC-124	51.6	-	78.5
TDS (mg/L)	HGWC-120	360	-	693
TDS (mg/L)	HGWC-121A	360	-	771
TDS (mg/L)	HGWC-124	360	-	357

Notes:

- = Not applicable

-- = Indicates the parameter was not analyzed as part of the verification event.

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 using interwell statistics.

(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.

Interwell Prediction Limit - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 1/29/2020, 3:04 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower 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>
Boron (mg/L)	HGWC-120	0.3634	n/a	10/22/2019	1	Yes	11	0	No	0.002505	Param 1 of 2
Boron (mg/L)	HGWC-121A	0.3634	n/a	10/21/2019	2.4	Yes	11	0	No	0.002505	Param 1 of 2
Boron (mg/L)	HGWC-124	0.3634	n/a	10/21/2019	0.5	Yes	11	0	No	0.002505	Param 1 of 2
Calcium (mg/L)	HGWC-120	91.03	n/a	10/22/2019	171	Yes	11	0	No	0.002505	Param 1 of 2
Calcium (mg/L)	HGWC-121A	91.03	n/a	10/21/2019	173	Yes	11	0	No	0.002505	Param 1 of 2
Calcium (mg/L)	HGWC-124	91.03	n/a	10/21/2019	96.9	Yes	11	0	No	0.002505	Param 1 of 2
Chloride (mg/L)	HGWC-121A	4.5	n/a	10/21/2019	29.9	Yes	11	0	n/a	0.01166	NP (normality) 1 of 2
Fluoride (mg/L)	HGWC-120	0.2549	n/a	10/22/2019	0.53	Yes	12	0	No	0.002505	Param 1 of 2
pH (s.u.)	HGWC-124	6.909	6.329	10/21/2019	7.05	Yes	11	0	No	0.001253	Param 1 of 2
Sulfate (mg/L)	HGWC-120	51.55	n/a	10/22/2019	266	Yes	11	0	x^5	0.002505	Param 1 of 2
Sulfate (mg/L)	HGWC-121A	51.55	n/a	10/21/2019	238	Yes	11	0	x^5	0.002505	Param 1 of 2
Sulfate (mg/L)	HGWC-124	51.55	n/a	10/21/2019	78.5	Yes	11	0	x^5	0.002505	Param 1 of 2
Total Dissolved Solids (mg/L)	HGWC-120	360.1	n/a	10/22/2019	693	Yes	10	0	No	0.002505	Param 1 of 2
Total Dissolved Solids (mg/L)	HGWC-121A	360.1	n/a	10/21/2019	771	Yes	10	0	No	0.002505	Param 1 of 2

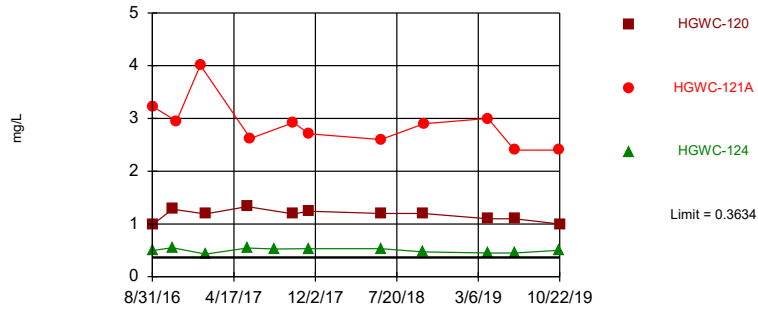
Interwell Prediction Limit - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 1/29/2020, 3:04 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower 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>
Boron (mg/L)	HGWC-120	0.3634	n/a	10/22/2019	1	Yes	11	0	No	0.002505	Param 1 of 2
Boron (mg/L)	HGWC-121A	0.3634	n/a	10/21/2019	2.4	Yes	11	0	No	0.002505	Param 1 of 2
Boron (mg/L)	HGWC-124	0.3634	n/a	10/21/2019	0.5	Yes	11	0	No	0.002505	Param 1 of 2
Calcium (mg/L)	HGWC-120	91.03	n/a	10/22/2019	171	Yes	11	0	No	0.002505	Param 1 of 2
Calcium (mg/L)	HGWC-121A	91.03	n/a	10/21/2019	173	Yes	11	0	No	0.002505	Param 1 of 2
Calcium (mg/L)	HGWC-124	91.03	n/a	10/21/2019	96.9	Yes	11	0	No	0.002505	Param 1 of 2
Chloride (mg/L)	HGWC-120	4.5	n/a	10/22/2019	3.4	No	11	0	n/a	0.01166	NP (normality) 1 of 2
Chloride (mg/L)	HGWC-121A	4.5	n/a	10/21/2019	29.9	Yes	11	0	n/a	0.01166	NP (normality) 1 of 2
Chloride (mg/L)	HGWC-124	4.5	n/a	10/21/2019	3.6	No	11	0	n/a	0.01166	NP (normality) 1 of 2
Fluoride (mg/L)	HGWC-120	0.2549	n/a	10/22/2019	0.53	Yes	12	0	No	0.002505	Param 1 of 2
Fluoride (mg/L)	HGWC-121A	0.2549	n/a	10/21/2019	0.18	No	12	0	No	0.002505	Param 1 of 2
Fluoride (mg/L)	HGWC-124	0.2549	n/a	10/21/2019	0.073	No	12	0	No	0.002505	Param 1 of 2
pH (s.u.)	HGWC-120	6.909	6.329	10/22/2019	6.74	No	11	0	No	0.001253	Param 1 of 2
pH (s.u.)	HGWC-121A	6.909	6.329	10/21/2019	6.74	No	11	0	No	0.001253	Param 1 of 2
pH (s.u.)	HGWC-124	6.909	6.329	10/21/2019	7.05	Yes	11	0	No	0.001253	Param 1 of 2
Sulfate (mg/L)	HGWC-120	51.55	n/a	10/22/2019	266	Yes	11	0	x^5	0.002505	Param 1 of 2
Sulfate (mg/L)	HGWC-121A	51.55	n/a	10/21/2019	238	Yes	11	0	x^5	0.002505	Param 1 of 2
Sulfate (mg/L)	HGWC-124	51.55	n/a	10/21/2019	78.5	Yes	11	0	x^5	0.002505	Param 1 of 2
Total Dissolved Solids (mg/L)	HGWC-120	360.1	n/a	10/22/2019	693	Yes	10	0	No	0.002505	Param 1 of 2
Total Dissolved Solids (mg/L)	HGWC-121A	360.1	n/a	10/21/2019	771	Yes	10	0	No	0.002505	Param 1 of 2
Total Dissolved Solids (mg/L)	HGWC-124	360.1	n/a	10/21/2019	357	No	10	0	No	0.002505	Param 1 of 2

Exceeds Limit: HGWC-120, HGWC-121A, HGWC-124

Prediction Limit
Interwell Parametric

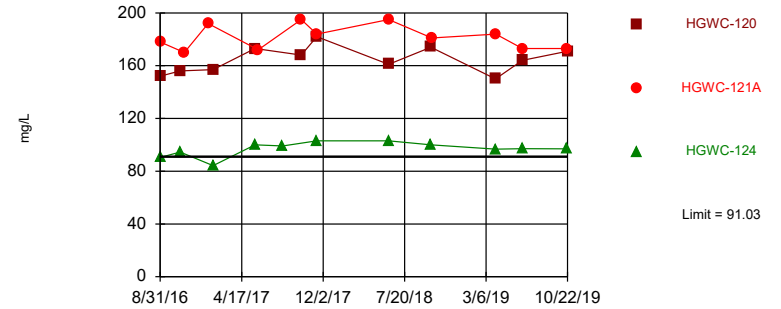


Background Data Summary: Mean=0.272, Std. Dev.=0.04241, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9514, critical = 0.792. Kappa = 2.155 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Boron Analysis Run 1/29/2020 2:58 AM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Exceeds Limit: HGWC-120, HGWC-121A, HGWC-124

Prediction Limit
Interwell Parametric

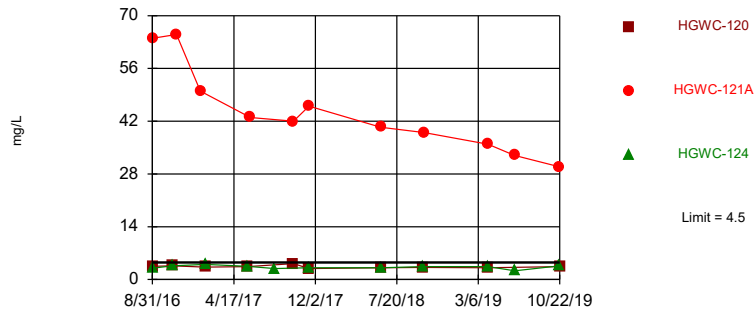


Background Data Summary: Mean=74.16, Std. Dev.=7.826, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9762, critical = 0.792. Kappa = 2.155 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Calcium Analysis Run 1/29/2020 2:58 AM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Exceeds Limit: HGWC-121A

Prediction Limit
Interwell Non-parametric

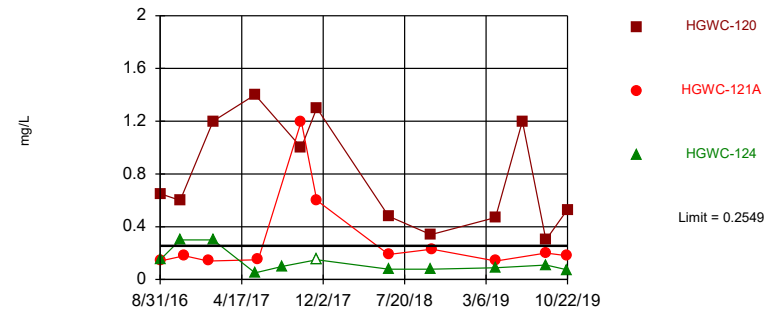


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 11 background values. Annual per-constituent alpha = 0.06795. Individual comparison alpha = 0.01166 (1 of 2). Comparing 3 points to limit.

Constituent: Chloride Analysis Run 1/29/2020 2:58 AM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Exceeds Limit: HGWC-120

Prediction Limit
Interwell Parametric

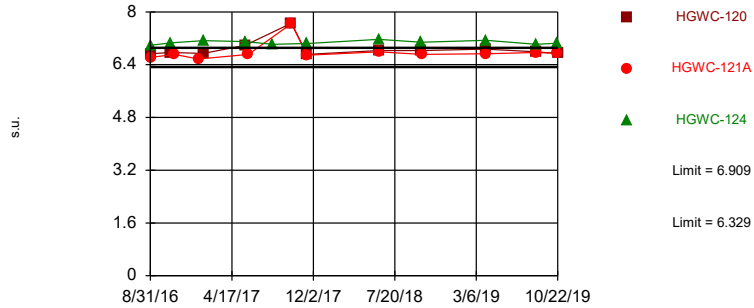


Background Data Summary: Mean=0.1508, Std. Dev.=0.04963, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9256, critical = 0.805. Kappa = 2.096 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Fluoride Analysis Run 1/29/2020 2:58 AM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Exceeds Limits: HGWC-124

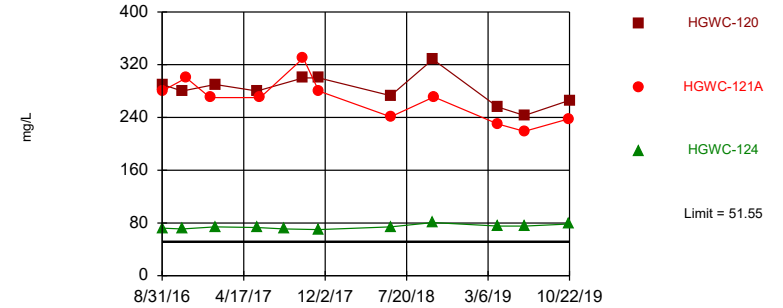
Prediction Limit
Interwell Parametric



Background Data Summary: Mean=6.619, Std. Dev.=0.1346, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9554, critical = 0.792. Kappa = 2.155 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001253. Comparing 3 points to limit.

Exceeds Limit: HGWC-120, HGWC-121A, HGWC-124

Prediction Limit
Interwell Parametric



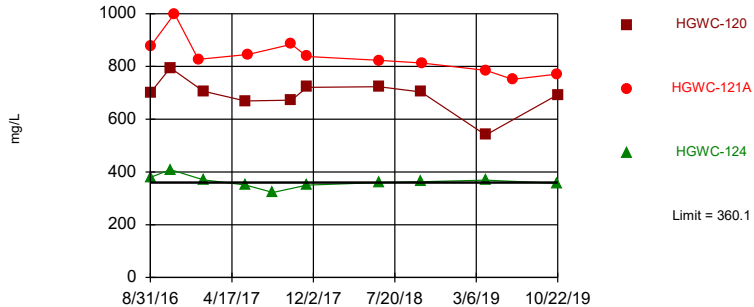
Background Data Summary (based on x*5 transformation): Mean=2.4e8, Std. Dev.=5.9e7, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8006, critical = 0.792. Kappa = 2.155 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: pH Analysis Run 1/29/2020 2:58 AM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Constituent: Sulfate Analysis Run 1/29/2020 2:58 AM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Exceeds Limit: HGWC-120, HGWC-121A

Prediction Limit
Interwell Parametric



Background Data Summary: Mean=272.8, Std. Dev.=39.42, n=10. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8188, critical = 0.781. Kappa = 2.214 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Total Dissolved Solids Analysis Run 1/29/2020 2:58 AM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Trend Test - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 2/10/2020, 11:22 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Chloride (mg/L)	HGWA-122 (bg)	0.2475	46	34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-121A	-8.258	-49	-34	Yes	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-121A	-37.73	-41	-34	Yes	11	0	n/a	n/a	0.01	NP

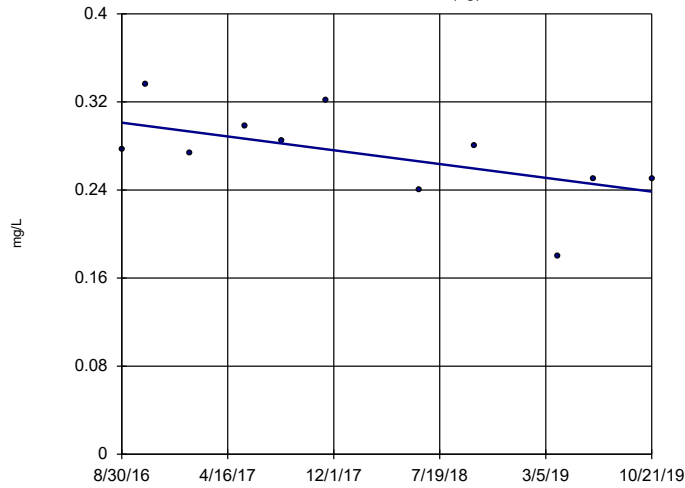
Trend Test - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 2/10/2020, 11:22 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWA-122 (bg)	-0.01993	-22	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-120	-0.05273	-16	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-121A	-0.1988	-28	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-124	-0.01605	-16	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-122 (bg)	-2.43	-7	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-120	3.925	15	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-121A	0	0	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-124	0.9834	11	34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-122 (bg)	0.2475	46	34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-121A	-8.258	-49	-34	Yes	11	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-122 (bg)	0	-3	-38	No	12	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-120	-0.1016	-21	-38	No	12	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWA-122 (bg)	-0.06942	-17	-34	No	11	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWC-124	0.01007	6	34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-122 (bg)	-1.132	-27	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-120	-8.778	-16	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-121A	-20.99	-29	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-124	1.626	27	34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-122 (bg)	-4.614	-7	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-120	-14.48	-9	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-121A	-37.73	-41	-34	Yes	11	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

HGWA-122 (bg)

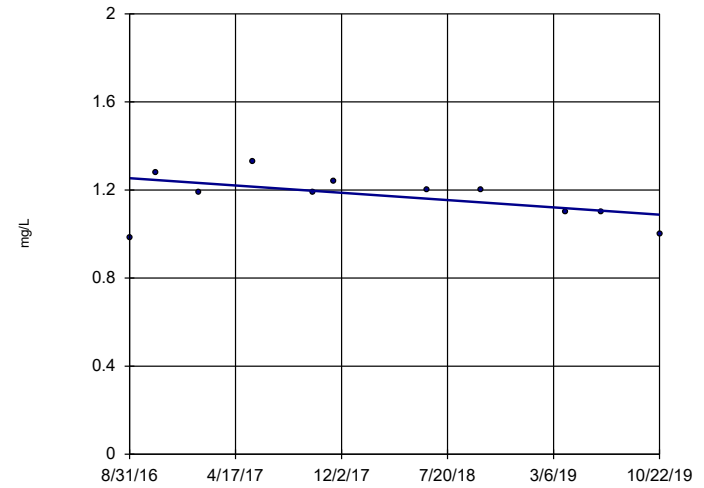


n = 11
 Slope = -0.01993
 units per year.
 Mann-Kendall
 statistic = -22
 critical = -34
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-120

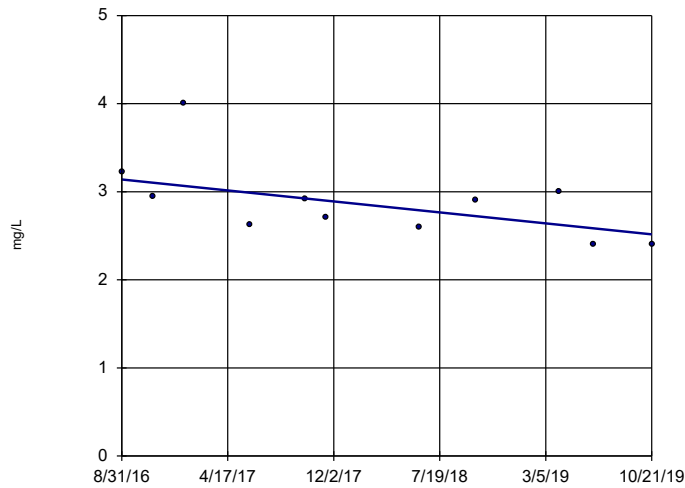


n = 11
 Slope = -0.05273
 units per year.
 Mann-Kendall
 statistic = -16
 critical = -34
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-121A

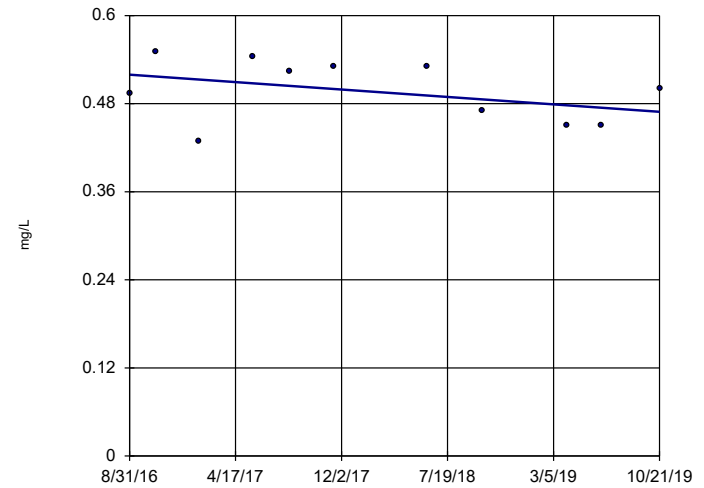


n = 11
 Slope = -0.1988
 units per year.
 Mann-Kendall
 statistic = -28
 critical = -34
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-124

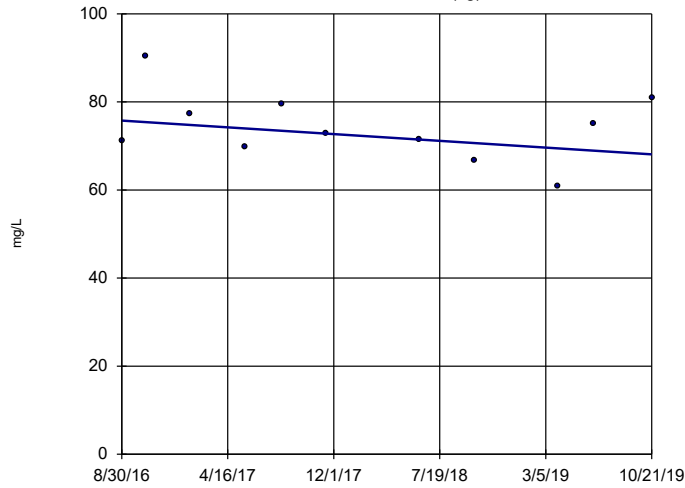


n = 11
 Slope = -0.01605
 units per year.
 Mann-Kendall
 statistic = -16
 critical = -34
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWA-122 (bg)

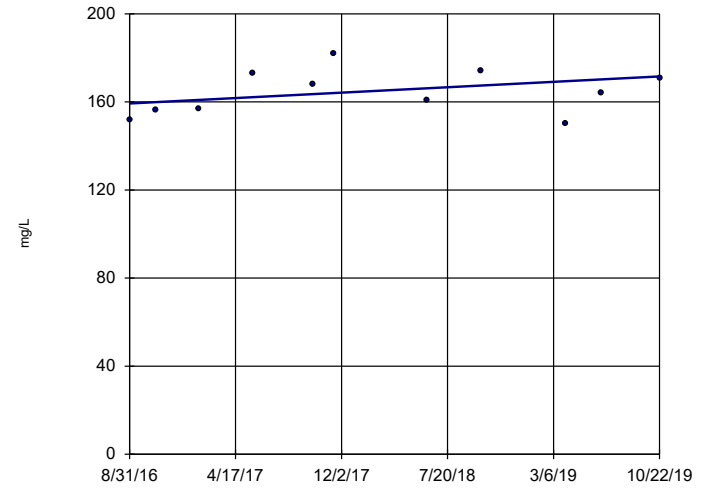


n = 11
 Slope = -2.43 units per year.
 Mann-Kendall statistic = -7
 critical = -34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-120

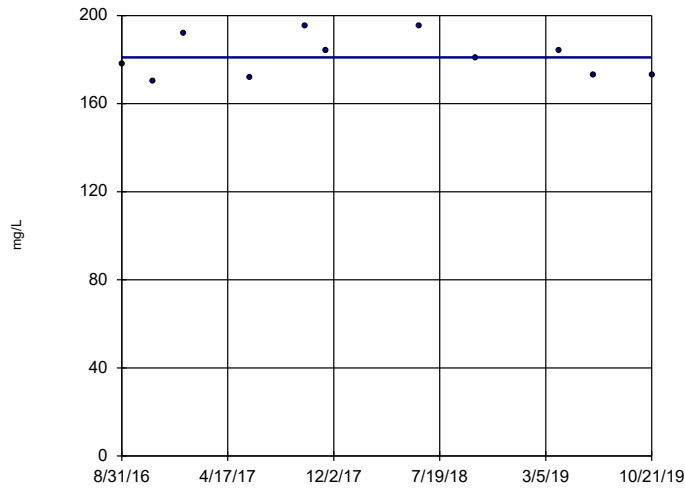


n = 11
 Slope = 3.925 units per year.
 Mann-Kendall statistic = 15
 critical = 34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-121A

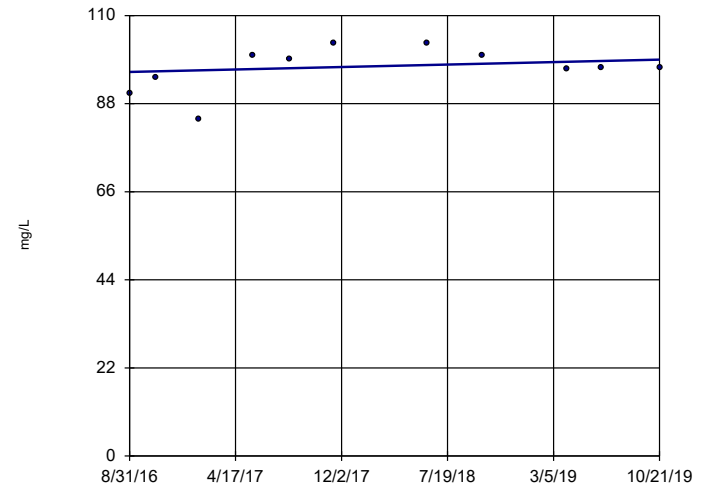


n = 11
 Slope = 0 units per year.
 Mann-Kendall statistic = 0
 critical = 34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-124

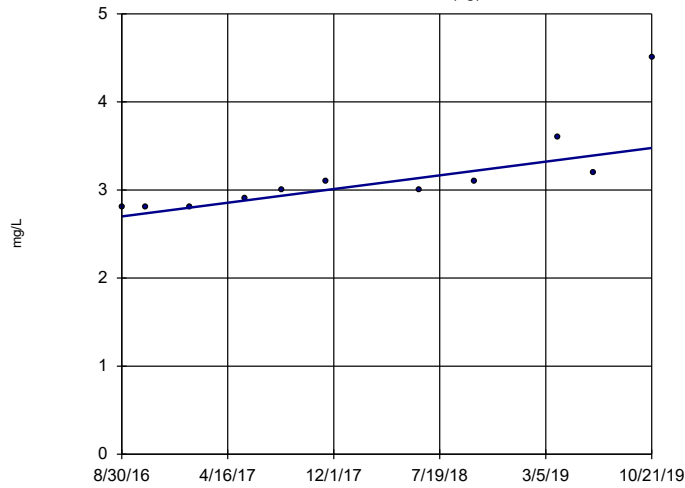


n = 11
 Slope = 0.9834 units per year.
 Mann-Kendall statistic = 11
 critical = 34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWA-122 (bg)

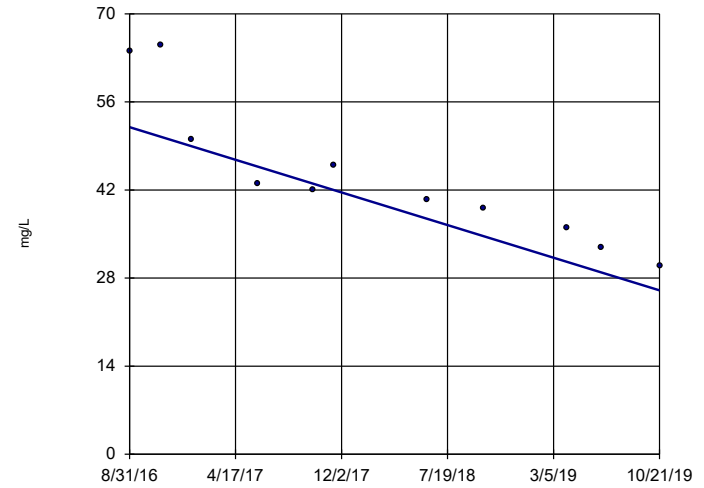


n = 11
 Slope = 0.2475 units per year.
 Mann-Kendall statistic = 46
 critical = 34
 Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-121A

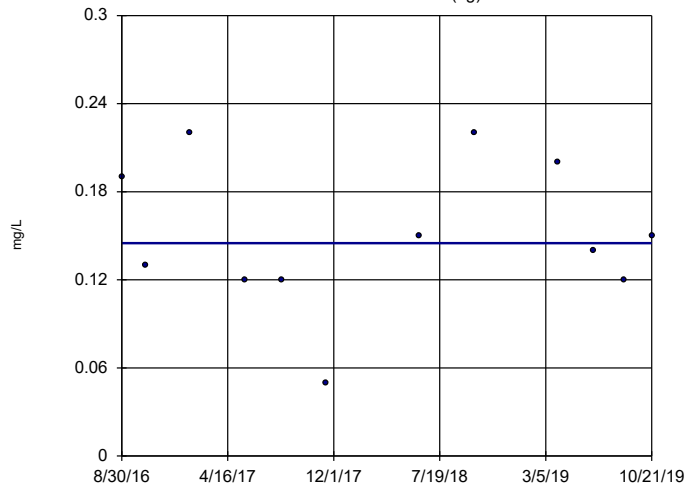


n = 11
 Slope = -8.258 units per year.
 Mann-Kendall statistic = -49
 critical = -34
 Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWA-122 (bg)

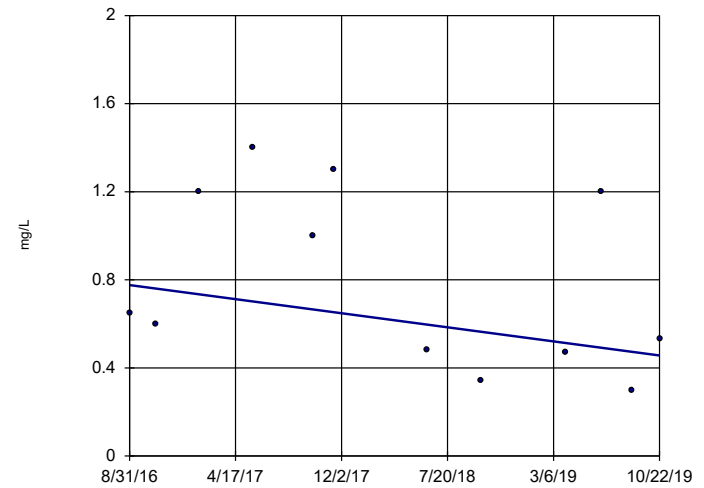


n = 12
 Slope = 0 units per year.
 Mann-Kendall statistic = -3
 critical = -38
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-120

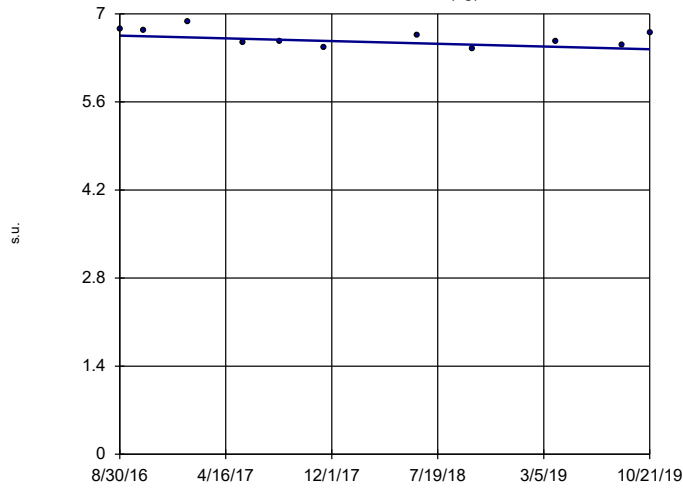


n = 12
 Slope = -0.1016 units per year.
 Mann-Kendall statistic = -21
 critical = -38
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWA-122 (bg)

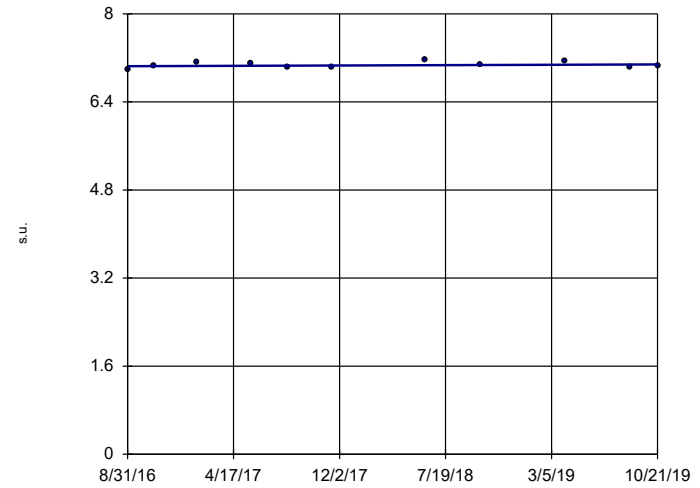


n = 11
 Slope = -0.06942 units per year.
 Mann-Kendall statistic = -17
 critical = -34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-124

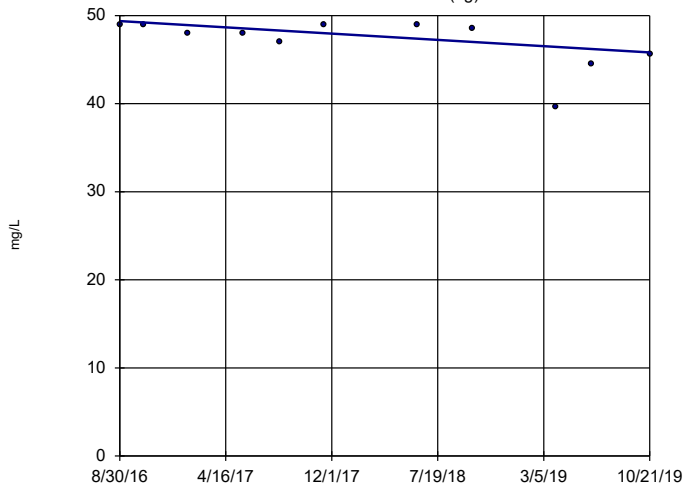


n = 11
 Slope = 0.01007 units per year.
 Mann-Kendall statistic = 6
 critical = 34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWA-122 (bg)

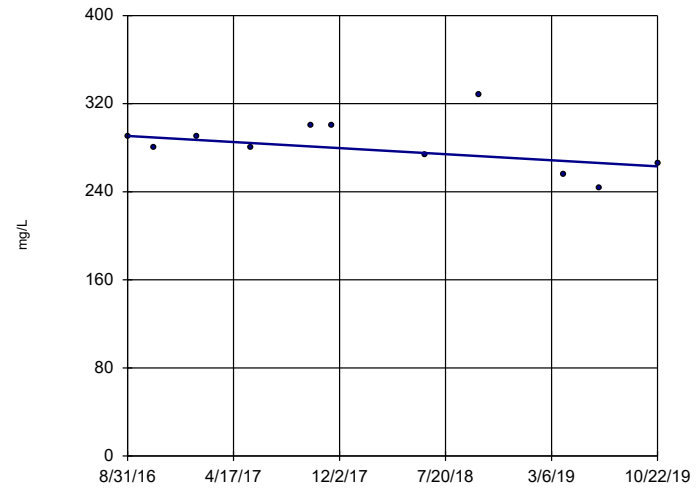


n = 11
 Slope = -1.132 units per year.
 Mann-Kendall statistic = -27
 critical = -34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-120

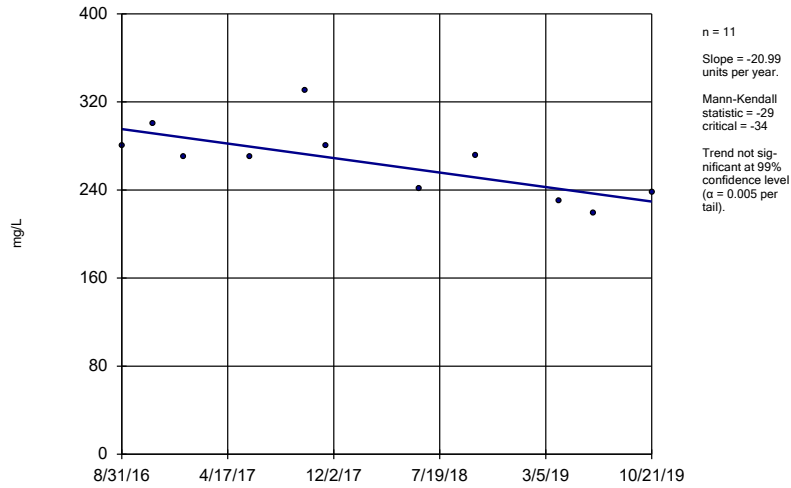


n = 11
 Slope = -8.778 units per year.
 Mann-Kendall statistic = -16
 critical = -34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

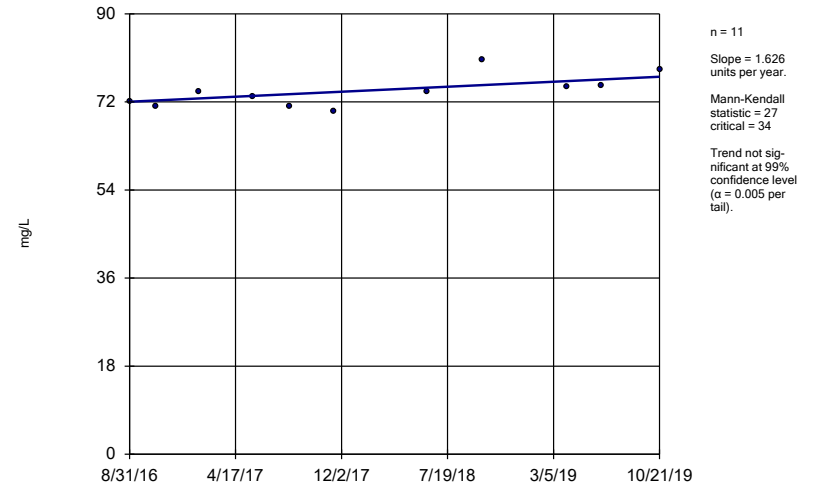
HGWC-121A



Constituent: Sulfate Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

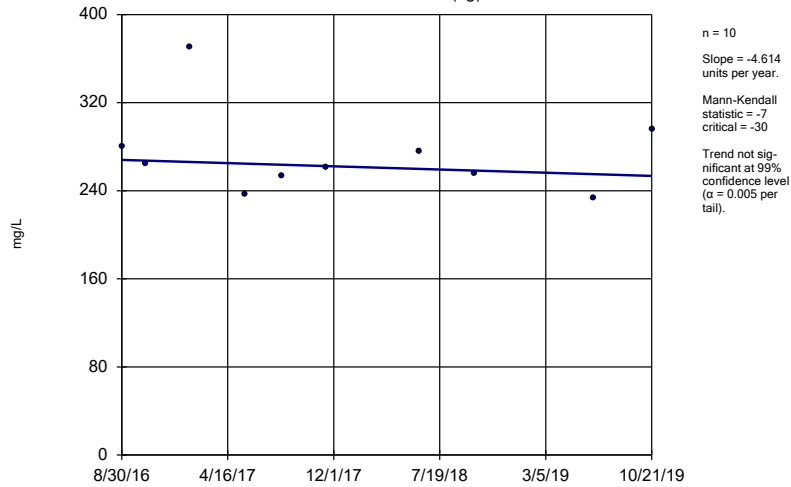
HGWC-124



Constituent: Sulfate Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

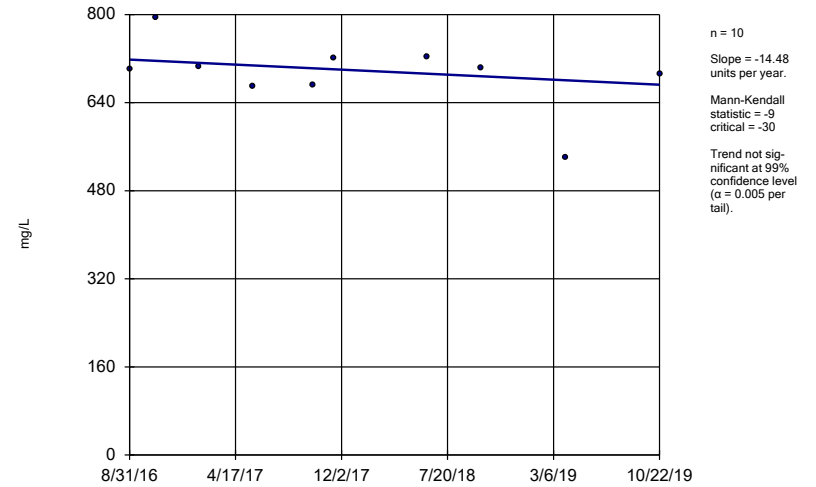
HGWA-122 (bg)



Constituent: Total Dissolved Solids Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

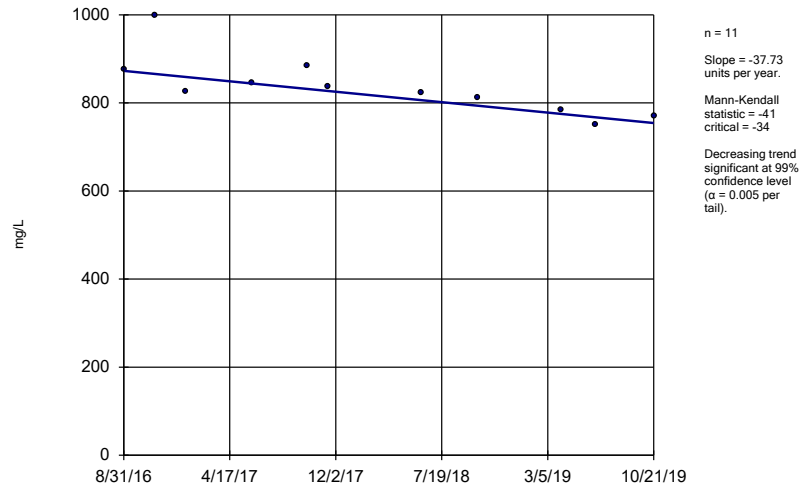
HGWC-120



Constituent: Total Dissolved Solids Analysis Run 2/10/2020 11:20 PM
 Hammond AP Client: Georgia Power Data: Hammond AP-3

Sen's Slope Estimator

HGWC-121A



Constituent: Total Dissolved Solids Analysis Run 2/10/2020 11:20 PM

Hammond AP Client: Georgia Power Data: Hammond AP-3

APPENDIX IV – GA EPD

Tolerance Limit (EPD)

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 3:42 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	9	100	n/a	0.6302	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	9	100	n/a	0.6302	NP Inter(NDs)
Barium (mg/L)	n/a	0.04923	n/a	n/a	n/a	10	0	No	0.05	Inter
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	9	100	n/a	0.6302	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	9	100	n/a	0.6302	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	10	50	n/a	0.5987	NP Inter(normality)
Cobalt (mg/L)	n/a	0.005	n/a	n/a	n/a	10	100	n/a	0.5987	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.2866	n/a	n/a	n/a	12	0	No	0.05	Inter
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	10	70	n/a	0.5987	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	10	100	n/a	0.5987	NP Inter(NDs)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	9	66.67	n/a	0.6302	NP Inter(NDs)
Molybdenum (mg/L) (1)	n/a	0.01	n/a	n/a	n/a	10	10	n/a	0.5987	NP Inter
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	9	88.89	n/a	0.6302	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	9	100	n/a	0.6302	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.866	n/a	n/a	n/a	10	0	No	0.05	Inter

Note:

(1) The tolerance limit was set as the reporting limit (RL) since there were no detections above the RL in the upgradient well.

Table 2
EPD Based Groundwater Protection Standards
Plant Hammond - Ash Pond 3
Floyd County, Georgia

Constituent	CAS	Units	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	0.049	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.0025	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	0.005	0.005
Fluoride	16984-48-8	mg/L	4	0.29	4
Lead ²	7439-92-1	mg/L	N/A	0.005	0.005
Lithium ²	7439-93-2	mg/L	N/A	0.03	0.03
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	1.87	5

Notes:

-- = not applicable

MCL - 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 MCL and the background Upper Tolerance Limit.

²Constituent without established MCL.

Confidence Interval (EPD) - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 3:57 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>
Lithium (mg/L) ⁽¹⁾	HGWC-120	0.03462	0.03088	0.03	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-120	0.03568	0.02088	0.01	Yes	10	0	No	0.01	Param.

Note:

1. The lithium reporting limit (RL) decreased from 0.05 mg/L to 0.03 mg/L in 2019. All reported values for HGWC-120 were estimated values (J) below the RL = 0.05 mg/L. Due to the change in RL, the estimated values are above the GWPS = RL= 0.03 mg/L.

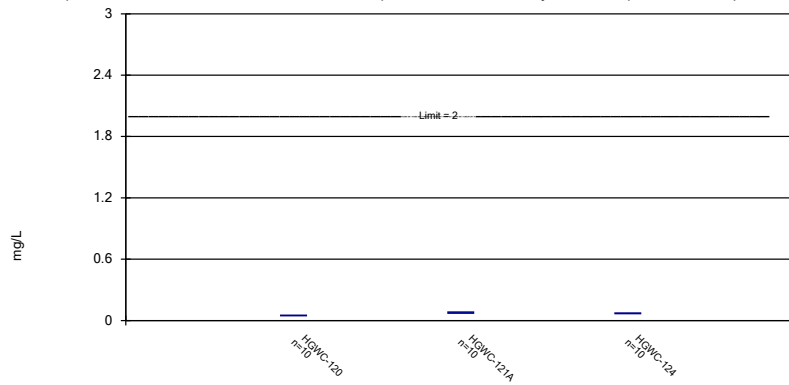
Confidence Interval (EPD) - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 3:57 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>
Barium (mg/L)	HGWC-120	0.05315	0.04585	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-121A	0.08392	0.07138	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-124	0.0745	0.06636	2	No	10	0	No	0.01	Param.
Chromium (mg/L)	HGWC-120	0.01	0.01	0.1	No	10	90	No	0.011	NP (NDs)
Chromium (mg/L)	HGWC-121A	0.01	0.01	0.1	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	HGWC-124	0.01	0.01	0.1	No	10	90	No	0.011	NP (NDs)
Cobalt (mg/L)	HGWC-120	0.004125	0.002775	0.005	No	10	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-121A	0.005	0.0003	0.005	No	10	70	No	0.011	NP (NDs)
Cobalt (mg/L)	HGWC-124	0.005	0.005	0.005	No	10	100	No	0.011	NP (NDs)
Fluoride (mg/L)	HGWC-120	1.105	0.4738	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-121A	0.6	0.14	4	No	11	0	No	0.006	NP (normality)
Fluoride (mg/L)	HGWC-124	0.1954	0.06832	4	No	11	9.091	sqrt(x)	0.01	Param.
Lead (mg/L)	HGWC-120	0.005	0.00009	0.005	No	10	70	No	0.011	NP (NDs)
Lead (mg/L)	HGWC-121A	0.005	0.00036	0.005	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	HGWC-124	0.005	0.000049	0.005	No	10	70	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-120	0.03462	0.03088	0.03	Yes	10	0	No	0.01	Param.
Lithium (mg/L)	HGWC-121A	0.00962	0.00836	0.03	No	10	0	No	0.01	Param.
Lithium (mg/L)	HGWC-124	0.05	0.0011	0.03	No	10	50	No	0.011	NP (normality)
Molybdenum (mg/L)	HGWC-120	0.03568	0.02088	0.01	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-121A	0.01	0.01	0.01	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	HGWC-124	0.01	0.0012	0.01	No	10	50	No	0.011	NP (normality)
Total Radium (pCi/L)	HGWC-120	1.266	0.6163	5	No	10	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-121A	1.247	0.4443	5	No	10	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-124	1.037	0.6354	5	No	10	0	No	0.01	Param.

Parametric Confidence Interval

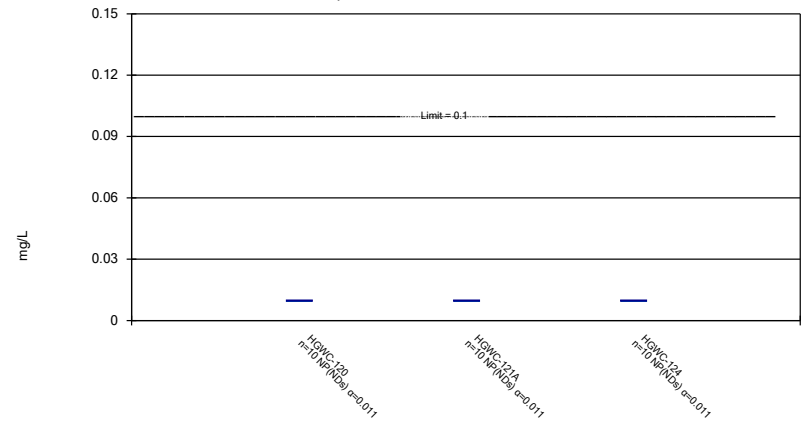
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 3/20/2020 3:56 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Non-Parametric Confidence Interval

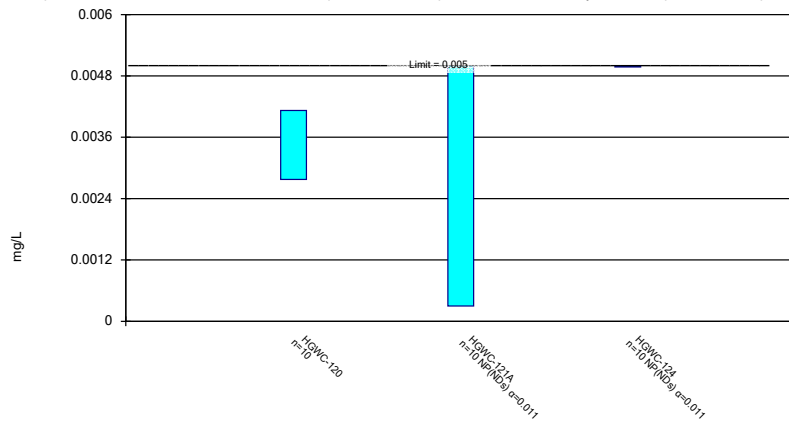
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 3/20/2020 3:56 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

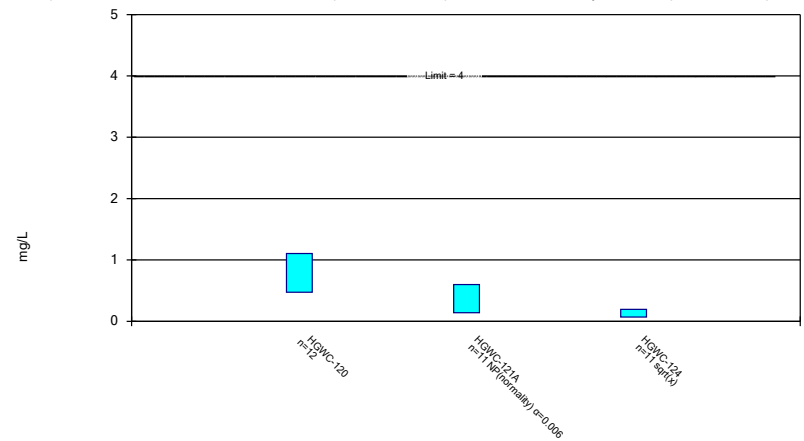
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 3/20/2020 3:56 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

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: Fluoride Analysis Run 3/20/2020 3:56 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 3/20/2020 3:57 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.045	0.0782	0.0744
10/26/2016	0.0462		0.0735
11/7/2016		0.0764	
1/13/2017		0.0744	
1/27/2017	0.0451		0.0632
5/25/2017	0.0488		0.0773
6/3/2017		0.0933	
8/11/2017			0.0672
10/2/2017	0.0479	0.0815	
11/15/2017	0.051	0.0807	0.0707
6/5/2018	0.051	0.078	0.07
10/2/2018	0.059		0.067
10/5/2018		0.074	
8/22/2019	0.05	0.066	
8/23/2019			0.066
10/21/2019		0.074	0.075
10/22/2019	0.051		
Mean	0.0495	0.07765	0.07043
Std. Dev.	0.004093	0.007023	0.004566
Upper Lim.	0.05315	0.08392	0.0745
Lower Lim.	0.04585	0.07138	0.06636

Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 3/20/2020 3:57 PM

Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	<0.01	<0.01	<0.01
10/26/2016	<0.01		<0.01
11/7/2016		<0.01	
1/13/2017		<0.01	
1/27/2017	<0.01		<0.01
5/25/2017	<0.01		<0.01
6/3/2017		<0.01	
8/11/2017			<0.01
10/2/2017	<0.01	<0.01	
11/15/2017	<0.01	<0.01	<0.01
6/5/2018	<0.01	<0.01	<0.01
10/2/2018	<0.01		<0.01
10/5/2018		<0.01	
8/22/2019	0.00072 (J)	<0.01	
8/23/2019			<0.01
10/21/2019		<0.01	0.00046 (J)
10/22/2019	<0.01		
Mean	0.009072	0.01	0.009046
Std. Dev.	0.002935	0	0.003017
Upper Lim.	0.01	0.01	0.01
Lower Lim.	0.01	0.01	0.01

Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 3/20/2020 3:57 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.0052 (J)	<0.005	<0.005
10/26/2016	0.0041 (J)		<0.005
11/7/2016		<0.005	
1/13/2017		<0.005	
1/27/2017	0.0034 (J)		<0.005
5/25/2017	0.0035 (J)		<0.005
6/3/2017		0.0005 (J)	
8/11/2017			<0.005
10/2/2017	0.0036 (J)	0.0003 (J)	
11/15/2017	0.0032 (J)	0.0003 (J)	<0.005
6/5/2018	0.0031 (J)	<0.005	<0.005
10/2/2018	0.0025 (J)		<0.005
10/5/2018		<0.005	
8/22/2019	0.0028 (J)	<0.005	
8/23/2019			<0.005
10/21/2019		<0.005	<0.005
10/22/2019	0.0031 (J)		
Mean	0.00345	0.00361	0.005
Std. Dev.	0.0007561	0.002239	0
Upper Lim.	0.004125	0.005	0.005
Lower Lim.	0.002775	0.0003	0.005

Confidence Interval

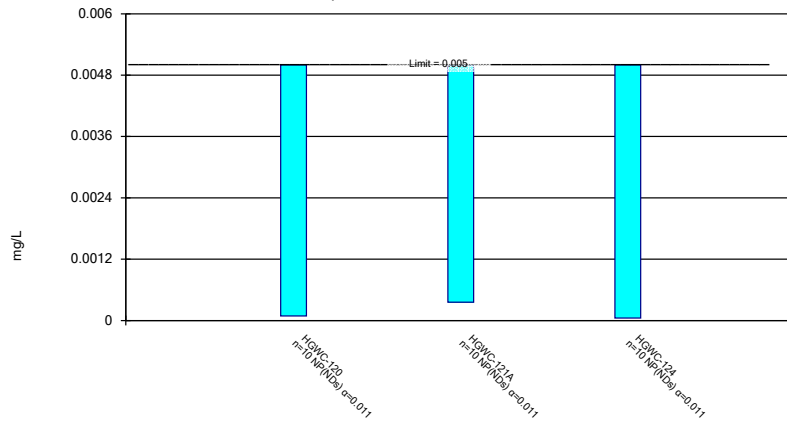
Constituent: Fluoride (mg/L) Analysis Run 3/20/2020 3:57 PM

Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.65	0.14 (J)	0.15 (J)
10/26/2016	0.6		0.3
11/7/2016		0.18 (J)	
1/13/2017		0.14 (J)	
1/27/2017	1.2		0.3
5/25/2017	1.4		0.05 (J)
6/3/2017		0.15 (J)	
8/11/2017			0.1 (J)
10/2/2017	1	1.2	
11/15/2017	1.3	0.6	<0.3
6/5/2018	0.48	0.19 (J)	0.078 (J)
10/2/2018	0.34		0.078 (J)
10/5/2018		0.23 (J)	
4/2/2019	0.47		
4/3/2019		0.14 (J)	0.089 (J)
6/17/2019	1.2		
8/22/2019	0.3 (J)	0.2 (J)	
8/23/2019			0.11 (J)
10/21/2019		0.18 (J)	0.073 (J)
10/22/2019	0.53		
Mean	0.7892	0.3045	0.1344
Std. Dev.	0.4019	0.3248	0.08742
Upper Lim.	1.105	0.6	0.1954
Lower Lim.	0.4738	0.14	0.06832

Non-Parametric Confidence Interval

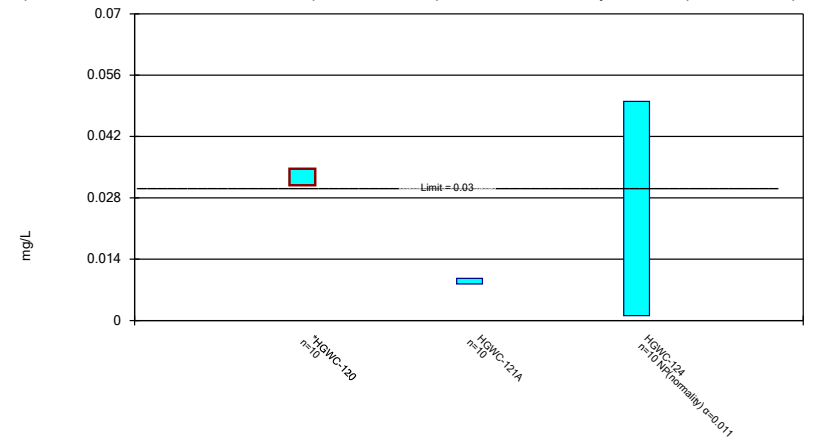
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 3/20/2020 3:56 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

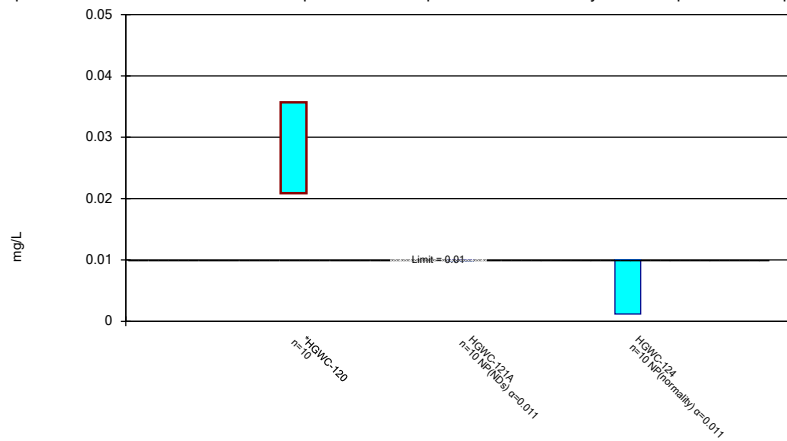
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 3/20/2020 3:56 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

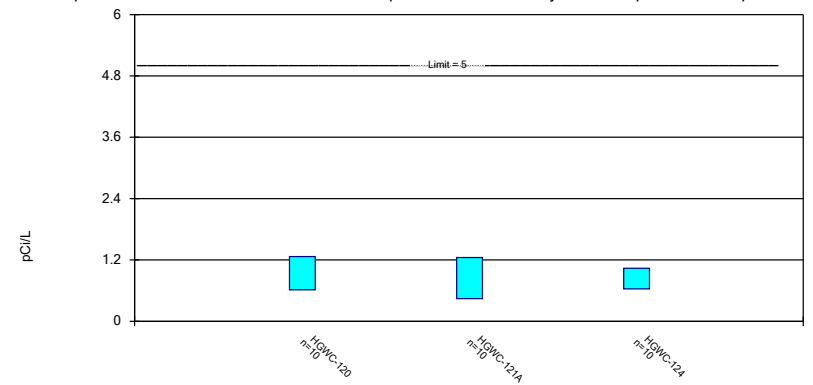
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 3/20/2020 3:56 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 3/20/2020 3:56 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Confidence Interval

Constituent: Lead (mg/L) Analysis Run 3/20/2020 3:57 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	<0.005	<0.005	<0.005
10/26/2016	0.0002 (J)		<0.005
11/7/2016		<0.005	
1/13/2017		<0.005	
1/27/2017	<0.005		<0.005
5/25/2017	9E-05 (J)		<0.005
6/3/2017		7E-05 (J)	
8/11/2017			8E-05 (J)
10/2/2017	8E-05 (J)	<0.005	
11/15/2017	<0.005	<0.005	<0.005
6/5/2018	<0.005	0.00036 (J)	<0.005
10/2/2018	<0.005		<0.005
10/5/2018		<0.005	
8/22/2019	<0.005	<0.005	
8/23/2019			4.9E-05 (J)
10/21/2019		<0.005	4.9E-05 (J)
10/22/2019	<0.005		
Mean	0.003537	0.004043	0.003518
Std. Dev.	0.002356	0.002019	0.002387
Upper Lim.	0.005	0.005	0.005
Lower Lim.	9E-05	0.00036	4.9E-05

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 3/20/2020 3:57 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.0333 (J)	0.0077 (J)	<0.05
10/26/2016	0.0352 (J)		<0.05
11/7/2016		0.0089 (J)	
1/13/2017		0.0091 (J)	
1/27/2017	0.0329 (J)		<0.05
5/25/2017	0.0347 (J)		0.0011 (J)
6/3/2017		0.0104 (J)	
8/11/2017			<0.05
10/2/2017	0.0337 (J)	0.0095 (J)	
11/15/2017	0.0347 (J)	0.0086 (J)	<0.05
6/5/2018	0.033 (J)	0.0092 (J)	0.0012 (J)
10/2/2018	0.031 (J)		0.0012 (J)
10/5/2018		0.0091 (J)	
8/22/2019	0.029 (J)	0.0084 (J)	
8/23/2019			0.0011 (J)
10/21/2019		0.009 (J)	0.0011 (J)
10/22/2019	0.03 (J)		
Mean	0.03275	0.00899	0.02557
Std. Dev.	0.002097	0.0007062	0.02575
Upper Lim.	0.03462	0.00962	0.05
Lower Lim.	0.03088	0.00836	0.0011

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 3/20/2020 3:57 PM

Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.0176	<0.01	<0.01
10/26/2016	0.0187		<0.01
11/7/2016		<0.01	
1/13/2017		<0.01	
1/27/2017	0.0214		<0.01
5/25/2017	0.0231		0.0009 (J)
6/3/2017		<0.01	
8/11/2017			0.0013 (J)
10/2/2017	0.0259	<0.01	
11/15/2017	0.0281	<0.01	0.0012 (J)
6/5/2018	0.033	<0.01	<0.01
10/2/2018	0.036		<0.01
10/5/2018		<0.01	
8/22/2019	0.039	<0.01	
8/23/2019			0.0014 (J)
10/21/2019		<0.01	0.0013 (J)
10/22/2019	0.04		
Mean	0.02828	0.01	0.00561
Std. Dev.	0.008299	0	0.004629
Upper Lim.	0.03568	0.01	0.01
Lower Lim.	0.02088	0.01	0.0012

Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 3/20/2020 3:57 PM

Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	1.47	1.57	1.22
10/26/2016	0.864 (U)		0.637 (U)
11/7/2016		0.739 (U)	
1/13/2017		0.744 (U)	
1/27/2017	0.521 (U)		0.795 (U)
5/25/2017	0.681 (U)		0.896 (U)
6/3/2017		0 (U)	
8/11/2017			0.828 (U)
10/2/2017	0.632 (U)	0.68 (U)	
11/15/2017	1.3	0.911 (U)	0.478 (U)
6/5/2018	1.26 (U)	0.948 (U)	0.947 (U)
10/2/2018	0.572 (U)		0.617 (U)
10/5/2018		1.17 (U)	
8/22/2019	1.35	1.3	
8/23/2019			0.834
10/21/2019		0.393 (U)	1.11 (U)
10/22/2019	0.76 (U)		
Mean	0.941	0.8455	0.8362
Std. Dev.	0.3639	0.4497	0.2251
Upper Lim.	1.266	1.247	1.037
Lower Lim.	0.6163	0.4443	0.6354

APPENDIX IV - USEPA

Tolerance Limit (USEPA)

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 3:42 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	9	100	n/a	0.6302	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	9	100	n/a	0.6302	NP Inter(NDs)
Barium (mg/L)	n/a	0.04923	n/a	n/a	n/a	10	0	No	0.05	Inter
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	9	100	n/a	0.6302	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	9	100	n/a	0.6302	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	10	50	n/a	0.5987	NP Inter(normality)
Cobalt (mg/L)	n/a	0.005	n/a	n/a	n/a	10	100	n/a	0.5987	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.2866	n/a	n/a	n/a	12	0	No	0.05	Inter
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	10	70	n/a	0.5987	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	10	100	n/a	0.5987	NP Inter(NDs)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	9	66.67	n/a	0.6302	NP Inter(NDs)
Molybdenum (mg/L) (1)	n/a	0.01	n/a	n/a	n/a	10	10	n/a	0.5987	NP Inter
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	9	88.89	n/a	0.6302	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	9	100	n/a	0.6302	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.866	n/a	n/a	n/a	10	0	No	0.05	Inter

Note:

(1) The tolerance limit was set as the reporting limit (RL) since there were no detections above the RL in the upgradient well.

Table 3
USEPA Based Groundwater Protection Standards
Plant Hammond - Ash Pond 3
Floyd County, Georgia

Constituent	CAS	Units	MCL	RSL	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	--	0.049	2
Beryllium	7440-41-7	mg/L	0.004	--	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	--	0.0025	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	0.006	0.005	0.006
Fluoride	16984-48-8	mg/L	4	--	0.29	4
Lead ³	7439-92-1	mg/L	N/A	0.015	0.005	0.015
Lithium ²	7439-93-2	mg/L	N/A	0.04	0.03	0.04
Mercury	7439-97-6	mg/L	0.002	--	0.0005	0.002
Molybdenum ²	7439-98-7	mg/L	N/A	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	--	1.87	5

Notes:

-- = not applicable

GWPS - Groundwater Protection Standards

MCL - Maximum Contaminant Level

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

¹GWPS selected as the greater value between the MCL and the background Upper Tolerance Limit.

²Regional Screening Level applied for constituent per CCR Rule Amendment, July 30, 2018.

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

Confidence Interval (USEPA) - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 4:13 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>
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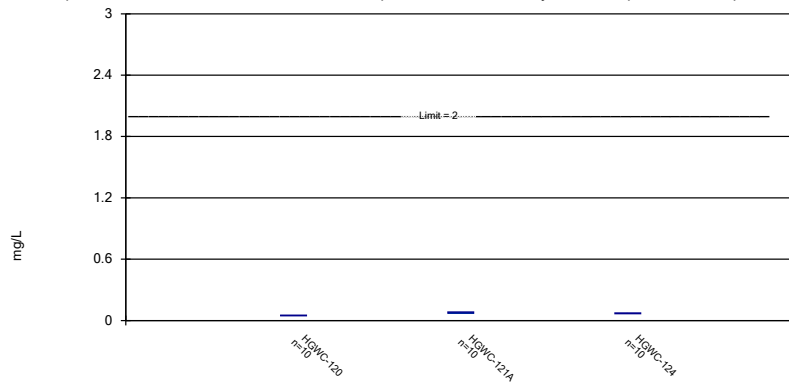
Confidence Interval (USEPA) - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-3 Printed 3/20/2020, 4:13 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>
Barium (mg/L)	HGWC-120	0.05315	0.04585	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-121A	0.08392	0.07138	2	No	10	0	No	0.01	Param.
Barium (mg/L)	HGWC-124	0.0745	0.06636	2	No	10	0	No	0.01	Param.
Chromium (mg/L)	HGWC-120	0.01	0.01	0.1	No	10	90	No	0.011	NP (NDs)
Chromium (mg/L)	HGWC-121A	0.01	0.01	0.1	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	HGWC-124	0.01	0.01	0.1	No	10	90	No	0.011	NP (NDs)
Cobalt (mg/L)	HGWC-120	0.004125	0.002775	0.006	No	10	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-121A	0.005	0.0003	0.006	No	10	70	No	0.011	NP (NDs)
Cobalt (mg/L)	HGWC-124	0.005	0.005	0.006	No	10	100	No	0.011	NP (NDs)
Fluoride (mg/L)	HGWC-120	1.105	0.4738	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-121A	0.6	0.14	4	No	11	0	No	0.006	NP (normality)
Fluoride (mg/L)	HGWC-124	0.1954	0.06832	4	No	11	9.091	sqrt(x)	0.01	Param.
Lead (mg/L)	HGWC-120	0.005	0.00009	0.015	No	10	70	No	0.011	NP (NDs)
Lead (mg/L)	HGWC-121A	0.005	0.00036	0.015	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	HGWC-124	0.005	0.000049	0.015	No	10	70	No	0.011	NP (NDs)
Lithium (mg/L)	HGWC-120	0.03462	0.03088	0.04	No	10	0	No	0.01	Param.
Lithium (mg/L)	HGWC-121A	0.00962	0.00836	0.04	No	10	0	No	0.01	Param.
Lithium (mg/L)	HGWC-124	0.05	0.0011	0.04	No	10	50	No	0.011	NP (normality)
Molybdenum (mg/L)	HGWC-120	0.03568	0.02088	0.1	No	10	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-121A	0.01	0.01	0.1	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	HGWC-124	0.01	0.0012	0.1	No	10	50	No	0.011	NP (normality)
Total Radium (pCi/L)	HGWC-120	1.266	0.6163	5	No	10	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-121A	1.247	0.4443	5	No	10	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-124	1.037	0.6354	5	No	10	0	No	0.01	Param.

Parametric Confidence Interval

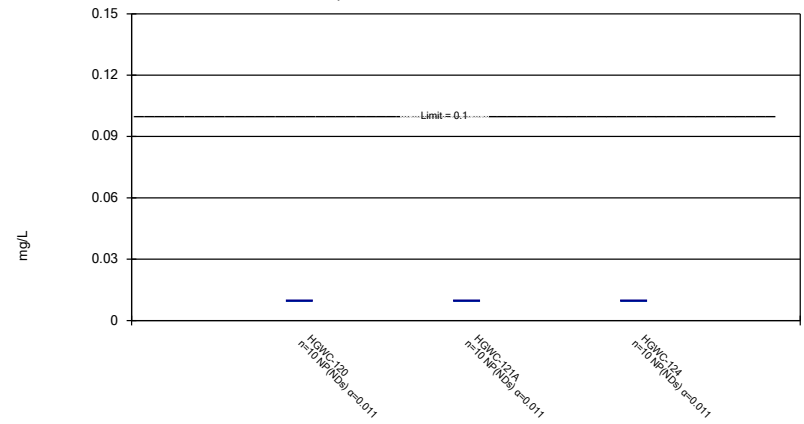
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 3/20/2020 4:11 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Non-Parametric Confidence Interval

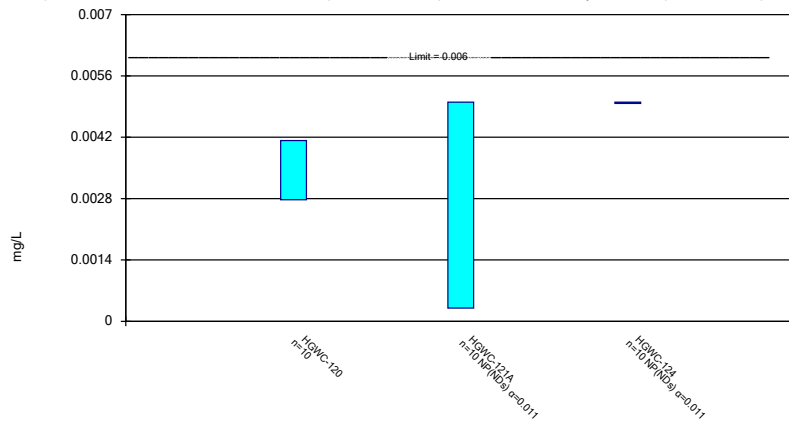
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 3/20/2020 4:11 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

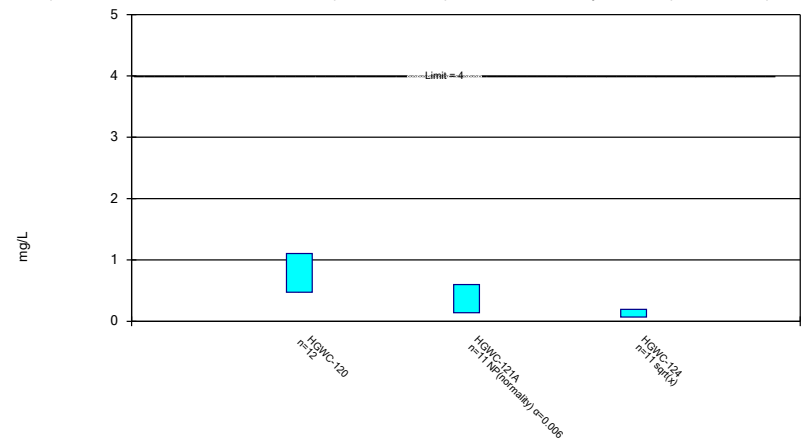
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 3/20/2020 4:11 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

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: Fluoride Analysis Run 3/20/2020 4:11 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 3/20/2020 4:13 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.045	0.0782	0.0744
10/26/2016	0.0462		0.0735
11/7/2016		0.0764	
1/13/2017		0.0744	
1/27/2017	0.0451		0.0632
5/25/2017	0.0488		0.0773
6/3/2017		0.0933	
8/11/2017			0.0672
10/2/2017	0.0479	0.0815	
11/15/2017	0.051	0.0807	0.0707
6/5/2018	0.051	0.078	0.07
10/2/2018	0.059		0.067
10/5/2018		0.074	
8/22/2019	0.05	0.066	
8/23/2019			0.066
10/21/2019		0.074	0.075
10/22/2019	0.051		
Mean	0.0495	0.07765	0.07043
Std. Dev.	0.004093	0.007023	0.004566
Upper Lim.	0.05315	0.08392	0.0745
Lower Lim.	0.04585	0.07138	0.06636

Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 3/20/2020 4:13 PM

Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	<0.01	<0.01	<0.01
10/26/2016	<0.01		<0.01
11/7/2016		<0.01	
1/13/2017		<0.01	
1/27/2017	<0.01		<0.01
5/25/2017	<0.01		<0.01
6/3/2017		<0.01	
8/11/2017			<0.01
10/2/2017	<0.01	<0.01	
11/15/2017	<0.01	<0.01	<0.01
6/5/2018	<0.01	<0.01	<0.01
10/2/2018	<0.01		<0.01
10/5/2018		<0.01	
8/22/2019	0.00072 (J)	<0.01	
8/23/2019			<0.01
10/21/2019		<0.01	0.00046 (J)
10/22/2019	<0.01		
Mean	0.009072	0.01	0.009046
Std. Dev.	0.002935	0	0.003017
Upper Lim.	0.01	0.01	0.01
Lower Lim.	0.01	0.01	0.01

Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 3/20/2020 4:13 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.0052 (J)	<0.005	<0.005
10/26/2016	0.0041 (J)		<0.005
11/7/2016		<0.005	
1/13/2017		<0.005	
1/27/2017	0.0034 (J)		<0.005
5/25/2017	0.0035 (J)		<0.005
6/3/2017		0.0005 (J)	
8/11/2017			<0.005
10/2/2017	0.0036 (J)	0.0003 (J)	
11/15/2017	0.0032 (J)	0.0003 (J)	<0.005
6/5/2018	0.0031 (J)	<0.005	<0.005
10/2/2018	0.0025 (J)		<0.005
10/5/2018		<0.005	
8/22/2019	0.0028 (J)	<0.005	
8/23/2019			<0.005
10/21/2019		<0.005	<0.005
10/22/2019	0.0031 (J)		
Mean	0.00345	0.00361	0.005
Std. Dev.	0.0007561	0.002239	0
Upper Lim.	0.004125	0.005	0.005
Lower Lim.	0.002775	0.0003	0.005

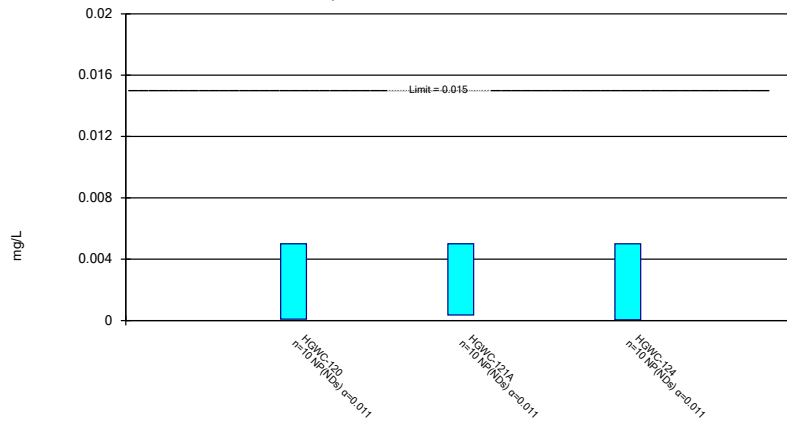
Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 3/20/2020 4:13 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.65	0.14 (J)	0.15 (J)
10/26/2016	0.6		0.3
11/7/2016		0.18 (J)	
1/13/2017		0.14 (J)	
1/27/2017	1.2		0.3
5/25/2017	1.4		0.05 (J)
6/3/2017		0.15 (J)	
8/11/2017			0.1 (J)
10/2/2017	1	1.2	
11/15/2017	1.3	0.6	<0.3
6/5/2018	0.48	0.19 (J)	0.078 (J)
10/2/2018	0.34		0.078 (J)
10/5/2018		0.23 (J)	
4/2/2019	0.47		
4/3/2019		0.14 (J)	0.089 (J)
6/17/2019	1.2		
8/22/2019	0.3 (J)	0.2 (J)	
8/23/2019			0.11 (J)
10/21/2019		0.18 (J)	0.073 (J)
10/22/2019	0.53		
Mean	0.7892	0.3045	0.1344
Std. Dev.	0.4019	0.3248	0.08742
Upper Lim.	1.105	0.6	0.1954
Lower Lim.	0.4738	0.14	0.06832

Non-Parametric Confidence Interval

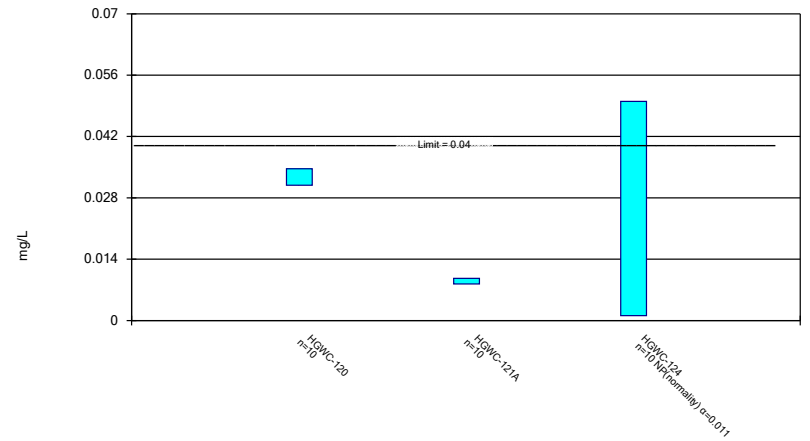
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 3/20/2020 4:12 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

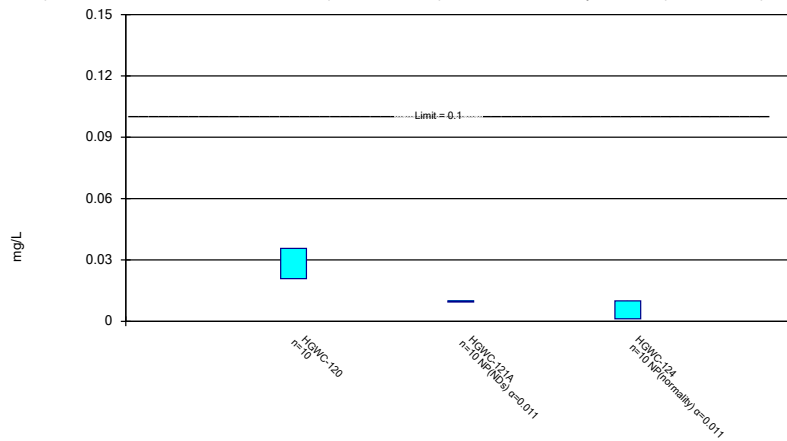
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 3/20/2020 4:12 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

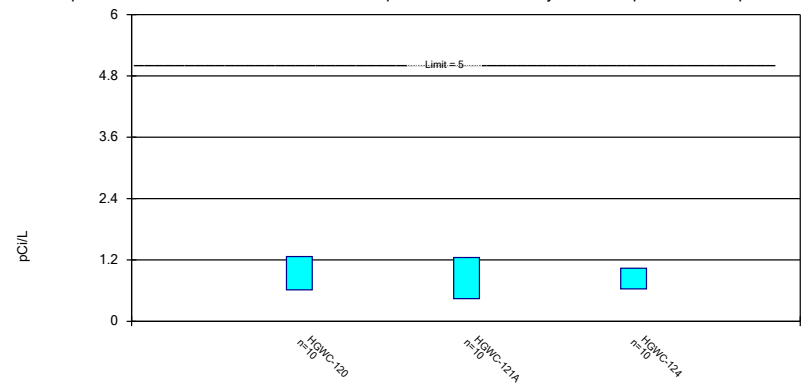
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 3/20/2020 4:12 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 3/20/2020 4:12 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

Confidence Interval

Constituent: Lead (mg/L) Analysis Run 3/20/2020 4:13 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	<0.005	<0.005	<0.005
10/26/2016	0.0002 (J)		<0.005
11/7/2016		<0.005	
1/13/2017		<0.005	
1/27/2017	<0.005		<0.005
5/25/2017	9E-05 (J)		<0.005
6/3/2017		7E-05 (J)	
8/11/2017			8E-05 (J)
10/2/2017	8E-05 (J)	<0.005	
11/15/2017	<0.005	<0.005	<0.005
6/5/2018	<0.005	0.00036 (J)	<0.005
10/2/2018	<0.005		<0.005
10/5/2018		<0.005	
8/22/2019	<0.005	<0.005	
8/23/2019			4.9E-05 (J)
10/21/2019		<0.005	4.9E-05 (J)
10/22/2019	<0.005		
Mean	0.003537	0.004043	0.003518
Std. Dev.	0.002356	0.002019	0.002387
Upper Lim.	0.005	0.005	0.005
Lower Lim.	9E-05	0.00036	4.9E-05

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 3/20/2020 4:13 PM
Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.0333 (J)	0.0077 (J)	<0.05
10/26/2016	0.0352 (J)		<0.05
11/7/2016		0.0089 (J)	
1/13/2017		0.0091 (J)	
1/27/2017	0.0329 (J)		<0.05
5/25/2017	0.0347 (J)		0.0011 (J)
6/3/2017		0.0104 (J)	
8/11/2017			<0.05
10/2/2017	0.0337 (J)	0.0095 (J)	
11/15/2017	0.0347 (J)	0.0086 (J)	<0.05
6/5/2018	0.033 (J)	0.0092 (J)	0.0012 (J)
10/2/2018	0.031 (J)		0.0012 (J)
10/5/2018		0.0091 (J)	
8/22/2019	0.029 (J)	0.0084 (J)	
8/23/2019			0.0011 (J)
10/21/2019		0.009 (J)	0.0011 (J)
10/22/2019	0.03 (J)		
Mean	0.03275	0.00899	0.02557
Std. Dev.	0.002097	0.0007062	0.02575
Upper Lim.	0.03462	0.00962	0.05
Lower Lim.	0.03088	0.00836	0.0011

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 3/20/2020 4:13 PM

Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	0.0176	<0.01	<0.01
10/26/2016	0.0187		<0.01
11/7/2016		<0.01	
1/13/2017		<0.01	
1/27/2017	0.0214		<0.01
5/25/2017	0.0231		0.0009 (J)
6/3/2017		<0.01	
8/11/2017			0.0013 (J)
10/2/2017	0.0259	<0.01	
11/15/2017	0.0281	<0.01	0.0012 (J)
6/5/2018	0.033	<0.01	<0.01
10/2/2018	0.036		<0.01
10/5/2018		<0.01	
8/22/2019	0.039	<0.01	
8/23/2019			0.0014 (J)
10/21/2019		<0.01	0.0013 (J)
10/22/2019	0.04		
Mean	0.02828	0.01	0.00561
Std. Dev.	0.008299	0	0.004629
Upper Lim.	0.03568	0.01	0.01
Lower Lim.	0.02088	0.01	0.0012

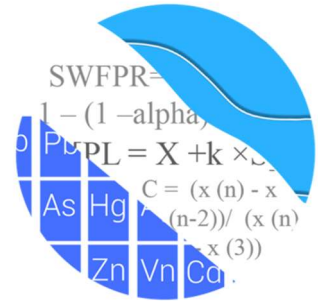
Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 3/20/2020 4:13 PM

Hammond AP Client: Georgia Power Data: Hammond AP-3

	HGWC-120	HGWC-121A	HGWC-124
8/31/2016	1.47	1.57	1.22
10/26/2016	0.864 (U)		0.637 (U)
11/7/2016		0.739 (U)	
1/13/2017		0.744 (U)	
1/27/2017	0.521 (U)		0.795 (U)
5/25/2017	0.681 (U)		0.896 (U)
6/3/2017		0 (U)	
8/11/2017			0.828 (U)
10/2/2017	0.632 (U)	0.68 (U)	
11/15/2017	1.3	0.911 (U)	0.478 (U)
6/5/2018	1.26 (U)	0.948 (U)	0.947 (U)
10/2/2018	0.572 (U)		0.617 (U)
10/5/2018		1.17 (U)	
8/22/2019	1.35	1.3	
8/23/2019			0.834
10/21/2019		0.393 (U)	1.11 (U)
10/22/2019	0.76 (U)		
Mean	0.941	0.8455	0.8362
Std. Dev.	0.3639	0.4497	0.2251
Upper Lim.	1.266	1.247	1.037
Lower Lim.	0.6163	0.4443	0.6354

GROUNDWATER STATS CONSULTING



July 27, 2020

Southern Company Services
Attn: Ms. Lauren Petty
3535 Colonnade Parkway
Birmingham, AL 35243

Re: Plant Hammond Ash Pond 3 (AP-3)
Statistical Analysis – March 2020 Sample Event

Dear Ms. Petty,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the statistical analysis of groundwater data for the March 2020 quality for Georgia Power Company's Plant Hammond AP-3. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015), the Georgia Environmental Protection Division Rules for Solid Waste Management Chapter 391-3-4-.10 and follows the USEPA Unified Guidance (2009).

Sampling began for the CCR program in 2016, and at least 8 background samples have been collected at each of the groundwater monitoring wells. The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient well:** HGWA-122
- **Downgradient wells:** HGWC-120, HGWC-121A, HGWC-124

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Kristina Rayner, Groundwater Statistician and Founder of Groundwater Stats Consulting.

The CCR program consists of the following constituents:

- **Appendix III** (Detection Monitoring) - boron, calcium, chloride, fluoride, pH, sulfate, and TDS

- **Appendix IV** (Assessment Monitoring) – antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Time series plots for Appendix III and IV parameters at all wells are provided for the purpose of screening data at these wells (Figure A). Additionally, a separate section of box plots is included for all constituents at upgradient and downgradient wells (Figure B). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells.

Data at all wells were evaluated during the background screening described below for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix III parameters based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves were provided with the screening to demonstrate that the selected statistical methods for Appendix III parameters comply with the USEPA Unified Guidance. The EPA suggests the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations.

Summary of Background Screening Conducted in March 2019

Outlier and Trend Testing

Time series plots were used to identify suspected outliers, or extreme values that would result in limits that are not representative of the current background data population. Suspected outliers at all wells for Appendix III and Appendix IV parameters were formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits.

Using the Tukey box plot method, two outliers were identified. Those findings were submitted with that report. While this was not present in any of the data screened in this report, when the most recent value is identified as an outlier, values are not flagged in the database at this time as they may represent a possible trend. If future values do not remain at similar concentrations, these values will be flagged as outliers and deselected. Several low values exist in the data sets and appear on the graphs as possible low outliers relative to the laboratory's Practical Quantitation Limit. However, these values are observed trace values (i.e. measurements reported by the laboratory between the Method Detection Limit and the Practical Quantitation Limit) and, therefore, were not flagged as outliers.

Of the outliers identified by Tukey's method, only one outlier was flagged for TDS in upgradient well HGWA-122. All other values are similar to remaining measurements within a given well or neighboring wells or were reported nondetects. The outlier summary follows this report (Figure C).

Additionally, when any values are flagged in the database as outliers, they are plotted in a disconnected and lighter symbol on the time series graph. The accompanying data pages display the flagged value in a lighter font as well. A substitution of the most recent reporting limit was applied when varying detection limits existed in data. When the reporting limit was higher than the CCR-Rule Specified levels discussed below, nondetects were substituted with one half the reporting limit.

No obvious seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

While trends may be identified by visual inspection, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant decreasing trends are present, all available data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When any records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits.

The results of the trend analyses showed one statistically significant decreasing trend for the Appendix III parameters. However, the trend noted was relatively low in magnitude when compared to average concentrations, and the background time period is short; therefore, no adjustments were made to the data sets.

Appendix III – Determination of Spatial Variation

The Analysis of Variance (ANOVA) is typically used to statistically evaluate differences in average concentrations among upgradient wells, which assists in identifying the most

appropriate statistical approach. However, the test requires a minimum of two upgradient wells, and currently only one upgradient well exists. Interwell methods are constructed in accordance with the Georgia EPD regulations and are used to evaluate compliance samples in downgradient wells.

Statistical Evaluation of Appendix III Parameters – March 2020

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed for all Appendix III parameters using all historical upgradient well data through March 2020 (Figure D). Downgradient measurements were compared to these interwell background limits. Interwell prediction limits use all available upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs).

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When the resample confirms the initial exceedance, a statistically significant increase (SSI) is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result and, therefore, no further action is necessary. If no resample is collected, the initial exceedance is automatically confirmed.

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. The confidence levels associated with parametric prediction limits are based on an overall false positive rate of 5%. When data cannot be normalized or the majority of data are nondetects, a nonparametric test is utilized where the highest background value is used to establish the upper prediction limit (and lowest value in the case of pH). The associated confidence level is dependent on the number of available background, future comparisons and resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (USEPA Unified Guidance, 2009), data are analyzed using either parametric or non-parametric prediction limits.

- No statistical analyses are required on wells and analytes containing 100% nondetects.
- When data contain <15% nondetects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit

utilized for nondetects is the practical quantification limit (PQL) as reported by the laboratory.

- When data contain between 15-50% nondetects, the Kaplan-Meier nondetect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% nondetects.

When the March 2020 compliance data from downgradient wells were compared to interwell prediction limits, several exceedances were noted. A summary table of these findings is provided along with the prediction limits (Figure D).

When prediction limit exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable (Figure E). Upgradient well data are included in the trend analyses for all parameters found to exceed their prediction limit in downgradient wells to identify whether similar patterns exist upgradient of the site which is an indication of natural variability in groundwater unrelated to practices at the site. A summary of the trend test results follows this letter. Statistically significant trends were noted for the following well/constituent pairs:

Increasing trends:

- Chloride: HGWA-122 (upgradient)
- TDS: HGWC-121A

Decreasing trends:

- Boron: HGWC-121A
- Chloride: HGWC-121A
- Sulfate: HGWC-121A

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits will be necessary to accommodate these types of changes. In the interwell case, newer data will be included in background following each event, provided that upgradient well data are reviewed for outliers and trending data. In some cases, the earlier portion of data may require deselecting prior to construction of limits in order to provide sensitive limits that will

rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Statistical Evaluation of Appendix IV Parameters – March 2020

Interwell tolerance limits were used to calculate the site-specific background limits from pooled upgradient well data for Appendix IV constituents (Figure F). Parametric tolerance limits are used when data follow a normal or transformed-normal distribution such as for barium, fluoride, molybdenum and combined radium226 + 228. When data contained greater than 50% nondetects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The background limits were then used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia EPD Rule 391-3-4-.10(6)(a) (Figure G).

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

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

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

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

Following the above Georgia EPD Rule requirements and the CCR Rule, State and Federal GWPS were established for statistical comparison of Appendix IV constituents for the March 2020 sample event (Figures G and H, respectively).

To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV constituents in each downgradient well for the State and

Federal requirements (Figures I and J, respectively). The Sanitas software was used to calculate the tolerance limits and the confidence intervals. The confidence intervals for the State were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a) and the confidence intervals for the Federal were prepared according to the CCR Rule. Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. If there is an exceedance of the GWPS, a statistically significant level (SSL) exceedance is identified. A summary of the confidence intervals follows this letter.

The following confidence interval exceedances were identified:

State

- Molybdenum: HGWC-120

Federal

- No exceedances

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for Hammond AP-3. If you have any questions or comments, please feel free to contact me.

For Groundwater Stats Consulting,



Kristina L. Rayner
Groundwater Statistician

100% ND

Date: 6/3/2020 11:06 AM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Antimony (mg/L)

HGWC-120, HGWC-121A, HGWC-124

Beryllium (mg/L)

HGWC-120, HGWC-121A, HGWC-124

Cadmium (mg/L)

HGWC-120, HGWC-121A, HGWC-124

Cobalt (mg/L)

HGWC-124

Mercury (mg/L)

HGWC-121A

Molybdenum (mg/L)

HGWC-121A

Thallium (mg/L)

HGWC-120, HGWC-121A, HGWC-124

Interwell Prediction Limit Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 5/29/2020, 2:23 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-120	0.3919	n/a	3/25/2020	1.1	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	HGWC-121A	0.3919	n/a	3/25/2020	1.6	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	HGWC-124	0.3919	n/a	3/24/2020	0.44	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-120	90.96	n/a	3/25/2020	170	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-121A	90.96	n/a	3/25/2020	139	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-124	90.96	n/a	3/24/2020	104	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Chloride (mg/L)	HGWC-121A	4.5	n/a	3/25/2020	16.3	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Fluoride (mg/L)	HGWC-120	0.2507	n/a	3/25/2020	0.43	Yes	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
pH (s.u.)	HGWC-124	7.045	6.27	3/24/2020	7.18	Yes	12	6.658	0.1848	0	None	No	0.001253	Param Inter 1 of 2
Sulfate (mg/L)	HGWC-120	49	n/a	3/25/2020	226	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Sulfate (mg/L)	HGWC-121A	49	n/a	3/25/2020	116	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Sulfate (mg/L)	HGWC-124	49	n/a	3/24/2020	74.6	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Total Dissolved Solids (mg/L)	HGWC-120	353.9	n/a	3/25/2020	665	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-121A	353.9	n/a	3/25/2020	521	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-124	353.9	n/a	3/24/2020	355	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2

Interwell Prediction Limit Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 5/29/2020, 2:23 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-120	0.3919	n/a	3/25/2020	1.1	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	HGWC-121A	0.3919	n/a	3/25/2020	1.6	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	HGWC-124	0.3919	n/a	3/24/2020	0.44	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-120	90.96	n/a	3/25/2020	170	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-121A	90.96	n/a	3/25/2020	139	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-124	90.96	n/a	3/24/2020	104	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Chloride (mg/L)	HGWC-120	4.5	n/a	3/25/2020	2.4	No	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Chloride (mg/L)	HGWC-121A	4.5	n/a	3/25/2020	16.3	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Chloride (mg/L)	HGWC-124	4.5	n/a	3/24/2020	2.7	No	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Fluoride (mg/L)	HGWC-120	0.2507	n/a	3/25/2020	0.43	Yes	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-121A	0.2507	n/a	3/25/2020	0.095	No	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-124	0.2507	n/a	3/24/2020	0.15ND	No	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
pH (s.u.)	HGWC-120	7.045	6.27	3/25/2020	6.8	No	12	6.658	0.1848	0	None	No	0.001253	Param Inter 1 of 2
pH (s.u.)	HGWC-121A	7.045	6.27	3/25/2020	6.91	No	12	6.658	0.1848	0	None	No	0.001253	Param Inter 1 of 2
pH (s.u.)	HGWC-124	7.045	6.27	3/24/2020	7.18	Yes	12	6.658	0.1848	0	None	No	0.001253	Param Inter 1 of 2
Sulfate (mg/L)	HGWC-120	49	n/a	3/25/2020	226	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Sulfate (mg/L)	HGWC-121A	49	n/a	3/25/2020	116	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Sulfate (mg/L)	HGWC-124	49	n/a	3/24/2020	74.6	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Total Dissolved Solids (mg/L)	HGWC-120	353.9	n/a	3/25/2020	665	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-121A	353.9	n/a	3/25/2020	521	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-124	353.9	n/a	3/24/2020	355	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2

Trend Test - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 6/26/2020, 4:19 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWC-121A	-0.2747	-39	-38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-122 ...	0.3079	56	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-121A	-9.809	-60	-38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-121A	-21.98	-40	-38	Yes	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-121A	-46.27	-52	-38	Yes	12	0	n/a	n/a	0.01	NP

Trend Test - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 6/26/2020, 4:19 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWA-122 ...	-0.02867	-33	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-120	-0.05124	-21	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-121A	-0.2747	-39	-38	Yes	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-124	-0.01687	-25	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-122 ...	0.3245	2	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-120	4.013	18	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-121A	-4.65	-11	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-124	1.996	22	38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-122 ...	0.3079	56	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-121A	-9.809	-60	-38	Yes	12	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-122 ...	-0.01236	-13	-43	No	13	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-120	-0.1016	-29	-43	No	13	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWA-122 ...	-0.02186	-6	-38	No	12	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWC-124	0.02032	17	38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-122 ...	-1.687	-38	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-120	-13.41	-27	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-121A	-21.98	-40	-38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-124	1.246	30	38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-122 ...	-1.936	-3	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-120	-14.48	-17	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-121A	-46.27	-52	-38	Yes	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-124	-4.753	-15	-34	No	11	0	n/a	n/a	0.01	NP

Upper Tolerance Limits

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 6/26/2020, 4:25 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Bg N	Std. Dev.	%NDs	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Barium (mg/L)	n/a	0.05318	n/a	n/a	n/a	11	0.003907	0	No	0.05	Inter
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	11	n/a	45.45	n/a	0.5688	NP Inter(normal...)
Cobalt (mg/L)	n/a	0.005	n/a	n/a	n/a	11	n/a	100	n/a	0.5688	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.2817	n/a	n/a	n/a	13	0.0509	0	No	0.05	Inter
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	11	n/a	63.64	n/a	0.5688	NP Inter(normal...)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	11	n/a	100	n/a	0.5688	NP Inter(NDs)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	9	n/a	66.67	n/a	0.6302	NP Inter(normal...)
Molybdenum (mg/L)	n/a	0.01007	n/a	n/a	n/a	11	0.002146	9.091	No	0.05	Inter
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	9	n/a	88.89	n/a	0.6302	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.813	n/a	n/a	n/a	11	0.3643	0	No	0.05	Inter

PLANT HAMMOND AP-3 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.05318	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.01	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.005	0.005
Combined Radium, Total (pCi/L)	5		1.813	5
Fluoride, Total (mg/L)	4		0.2817	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.01
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

**MCL = Maximum Contaminant Level*

PLANT HAMMOND AP-3 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.05318	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.01	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.005	0.006
Combined Radium, Total (pCi/L)	5		1.813	5
Fluoride, Total (mg/L)	4		0.2817	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

**MCL = Maximum Contaminant Level*

Confidence Interval Summary (State) - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-3 Printed 6/29/2020, 10:07 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Molybdenum (mg/L)	HGWC-120	0.03552	0.02208	0.01	Yes	11	0.0288	0.00806	0	None	No	0.01	Param.

Confidence Interval Summary (State) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-3 Printed 6/29/2020, 10:08 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	HGWC-120	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Antimony (mg/L)	HGWC-121A	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Antimony (mg/L)	HGWC-124	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-120	0.005	0.0007	0.01	No	9	0.003678	0.001991	66.67	None	No	0.002	NP (normality)
Arsenic (mg/L)	HGWC-121A	0.005	0.001	0.01	No	9	0.004156	0.001679	77.78	None	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-124	0.005	0.0006	0.01	No	9	0.004511	0.001467	88.89	None	No	0.002	NP (NDs)
Barium (mg/L)	HGWC-120	0.05302	0.04643	2	No	11	0.04973	0.003956	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-121A	0.08731	0.07187	2	No	11	0.07959	0.009265	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-124	0.07463	0.06706	2	No	11	0.07085	0.004545	0	None	No	0.01	Param.
Beryllium (mg/L)	HGWC-120	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Beryllium (mg/L)	HGWC-121A	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Beryllium (mg/L)	HGWC-124	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-120	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-121A	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-124	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Chromium (mg/L)	HGWC-120	0.01	0.0015	0.1	No	11	0.008384	0.0036	81.82	None	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-121A	0.01	0.01	0.1	No	11	0.009136	0.002864	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-124	0.01	0.00051	0.1	No	11	0.00827	0.003849	81.82	None	No	0.006	NP (NDs)
Cobalt (mg/L)	HGWC-120	0.004063	0.002865	0.005	No	11	0.003464	0.0007187	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-121A	0.005	0.0003	0.005	No	11	0.003736	0.002165	72.73	None	No	0.006	NP (normality)
Cobalt (mg/L)	HGWC-124	0.005	0.005	0.005	No	11	0.005	0	100	None	No	0.006	NP (NDs)
Fluoride (mg/L)	HGWC-120	1.057	0.466	4	No	13	0.7615	0.3975	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-121A	0.6	0.095	4	No	12	0.2871	0.3155	0	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-124	0.1517	0.06232	4	No	12	0.1357	0.08348	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Lead (mg/L)	HGWC-120	0.005	0.00009	0.005	No	11	0.00367	0.002278	72.73	None	No	0.006	NP (normality)
Lead (mg/L)	HGWC-121A	0.005	0.00036	0.005	No	11	0.00413	0.001937	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	HGWC-124	0.005	0.000049	0.005	No	11	0.003207	0.002488	63.64	None	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-120	0.03471	0.0292	0.03	No	11	0.03195	0.003304	0	None	No	0.01	Param.
Lithium (mg/L)	HGWC-121A	0.009593	0.007953	0.03	No	11	0.008773	0.000984	0	None	No	0.01	Param.
Lithium (mg/L)	HGWC-124	0.03	0.0011	0.03	No	11	0.01426	0.01507	45.45	None	No	0.006	NP (normality)
Mercury (mg/L)	HGWC-120	0.0005	0.00004	0.002	No	9	0.0004011	0.0001964	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	HGWC-121A	0.0005	0.0005	0.002	No	9	0.0005	0	100	None	No	0.002	NP (NDs)
Mercury (mg/L)	HGWC-124	0.0005	0.000051	0.002	No	9	0.0004501	0.0001497	88.89	None	No	0.002	NP (NDs)
Molybdenum (mg/L)	HGWC-120	0.03552	0.02208	0.01	Yes	11	0.0288	0.00806	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-121A	0.01	0.01	0.01	No	11	0.01	0	100	None	No	0.006	NP (NDs)
Molybdenum (mg/L)	HGWC-124	0.01	0.001	0.01	No	11	0.005191	0.004606	45.45	None	No	0.006	NP (normality)
Selenium (mg/L)	HGWC-120	0.01	0.002	0.05	No	9	0.009111	0.002667	88.89	None	No	0.002	NP (NDs)
Selenium (mg/L)	HGWC-121A	0.01	0.0011	0.05	No	9	0.009011	0.002967	88.89	None	No	0.002	NP (NDs)
Selenium (mg/L)	HGWC-124	0.01	0.0014	0.05	No	9	0.009044	0.002867	88.89	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-120	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-121A	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-124	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Total Radium (pCi/L)	HGWC-120	1.213	0.6245	5	No	11	0.9187	0.3531	0	None	No	0.01	Param.
Total Radium (pCi/L)	HGWC-121A	1.18	0.4489	5	No	11	0.8145	0.4388	0	None	No	0.01	Param.
Total Radium (pCi/L)	HGWC-124	1.011	0.6543	5	No	11	0.8325	0.2139	0	None	No	0.01	Param.

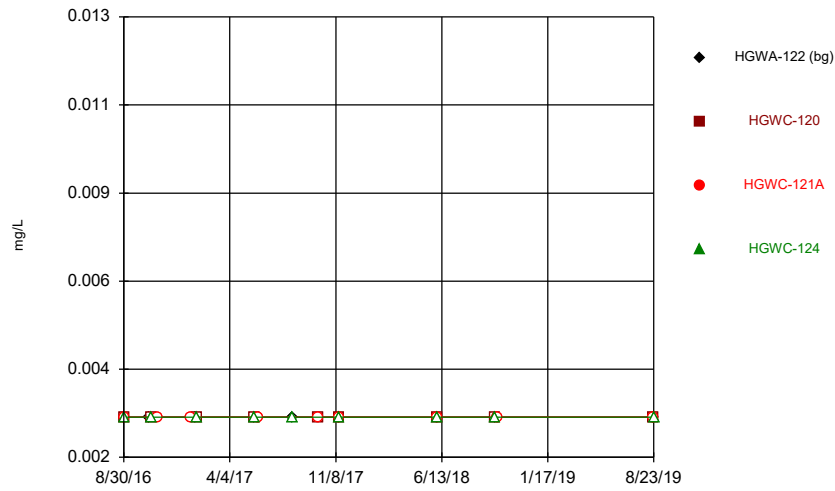
Confidence Interval Summary (Federal) - All Results (No Significant)

Plant Hammond Client: Southern Company Data: Hammond AP-3 Printed 6/29/2020, 10:13 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	HGWC-120	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Antimony (mg/L)	HGWC-121A	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Antimony (mg/L)	HGWC-124	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-120	0.005	0.0007	0.01	No	9	0.003678	0.001991	66.67	None	No	0.002	NP (normality)
Arsenic (mg/L)	HGWC-121A	0.005	0.001	0.01	No	9	0.004156	0.001679	77.78	None	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-124	0.005	0.0006	0.01	No	9	0.004511	0.001467	88.89	None	No	0.002	NP (NDs)
Barium (mg/L)	HGWC-120	0.05302	0.04643	2	No	11	0.04973	0.003956	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-121A	0.08731	0.07187	2	No	11	0.07959	0.009265	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-124	0.07463	0.06706	2	No	11	0.07085	0.004545	0	None	No	0.01	Param.
Beryllium (mg/L)	HGWC-120	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Beryllium (mg/L)	HGWC-121A	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Beryllium (mg/L)	HGWC-124	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-120	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-121A	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-124	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Chromium (mg/L)	HGWC-120	0.01	0.0015	0.1	No	11	0.008384	0.0036	81.82	None	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-121A	0.01	0.01	0.1	No	11	0.009136	0.002864	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-124	0.01	0.00051	0.1	No	11	0.00827	0.003849	81.82	None	No	0.006	NP (NDs)
Cobalt (mg/L)	HGWC-120	0.004063	0.002865	0.006	No	11	0.003464	0.0007187	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-121A	0.005	0.0003	0.006	No	11	0.003736	0.002165	72.73	None	No	0.006	NP (normality)
Cobalt (mg/L)	HGWC-124	0.005	0.005	0.006	No	11	0.005	0	100	None	No	0.006	NP (NDs)
Fluoride (mg/L)	HGWC-120	1.057	0.466	4	No	13	0.7615	0.3975	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-121A	0.6	0.095	4	No	12	0.2871	0.3155	0	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-124	0.1517	0.06232	4	No	12	0.1357	0.08348	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Lead (mg/L)	HGWC-120	0.005	0.00009	0.015	No	11	0.00367	0.002278	72.73	None	No	0.006	NP (normality)
Lead (mg/L)	HGWC-121A	0.005	0.00036	0.015	No	11	0.00413	0.001937	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	HGWC-124	0.005	0.000049	0.015	No	11	0.003207	0.002488	63.64	None	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-120	0.03471	0.0292	0.04	No	11	0.03195	0.003304	0	None	No	0.01	Param.
Lithium (mg/L)	HGWC-121A	0.009593	0.007953	0.04	No	11	0.008773	0.000984	0	None	No	0.01	Param.
Lithium (mg/L)	HGWC-124	0.03	0.0011	0.04	No	11	0.01426	0.01507	45.45	None	No	0.006	NP (normality)
Mercury (mg/L)	HGWC-120	0.0005	0.00004	0.002	No	9	0.0004011	0.0001964	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	HGWC-121A	0.0005	0.0005	0.002	No	9	0.0005	0	100	None	No	0.002	NP (NDs)
Mercury (mg/L)	HGWC-124	0.0005	0.000051	0.002	No	9	0.0004501	0.0001497	88.89	None	No	0.002	NP (NDs)
Molybdenum (mg/L)	HGWC-120	0.03552	0.02208	0.1	No	11	0.0288	0.00806	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-121A	0.01	0.01	0.1	No	11	0.01	0	100	None	No	0.006	NP (NDs)
Molybdenum (mg/L)	HGWC-124	0.01	0.001	0.1	No	11	0.005191	0.004606	45.45	None	No	0.006	NP (normality)
Selenium (mg/L)	HGWC-120	0.01	0.002	0.05	No	9	0.009111	0.002667	88.89	None	No	0.002	NP (NDs)
Selenium (mg/L)	HGWC-121A	0.01	0.0011	0.05	No	9	0.009011	0.002967	88.89	None	No	0.002	NP (NDs)
Selenium (mg/L)	HGWC-124	0.01	0.0014	0.05	No	9	0.009044	0.002867	88.89	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-120	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-121A	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-124	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Total Radium (pCi/L)	HGWC-120	1.213	0.6245	5	No	11	0.9187	0.3531	0	None	No	0.01	Param.
Total Radium (pCi/L)	HGWC-121A	1.18	0.4489	5	No	11	0.8145	0.4388	0	None	No	0.01	Param.
Total Radium (pCi/L)	HGWC-124	1.011	0.6543	5	No	11	0.8325	0.2139	0	None	No	0.01	Param.

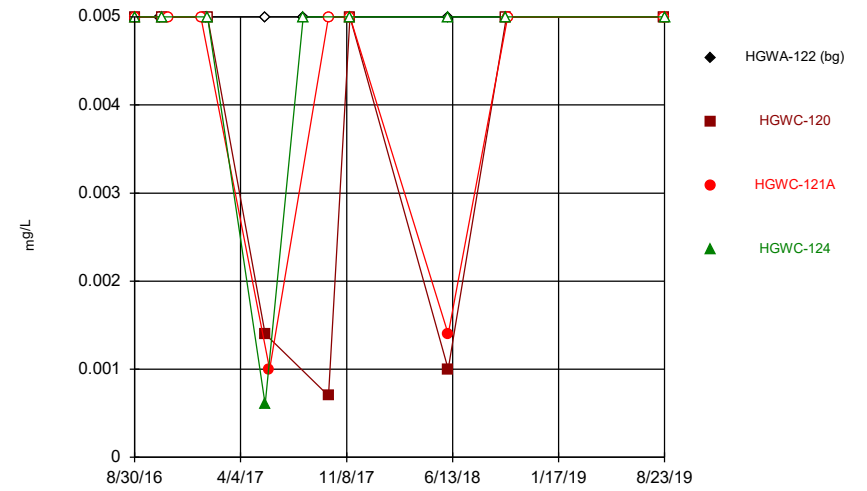
FIGURE A.

Time Series



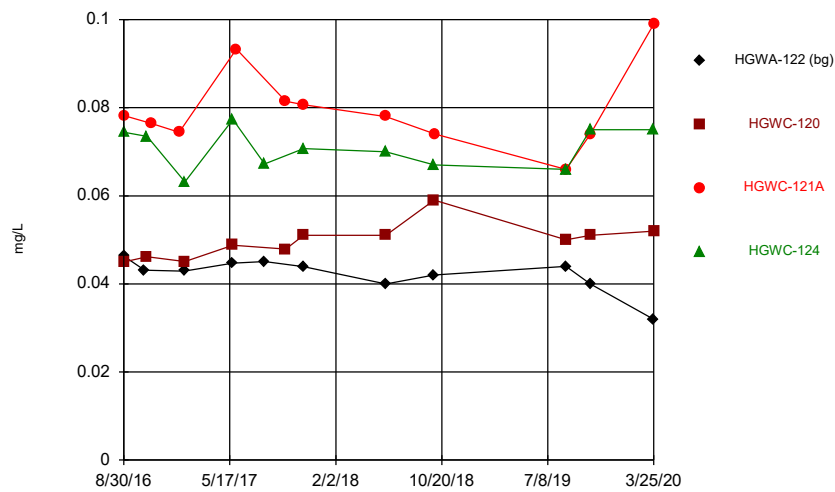
Constituent: Antimony Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



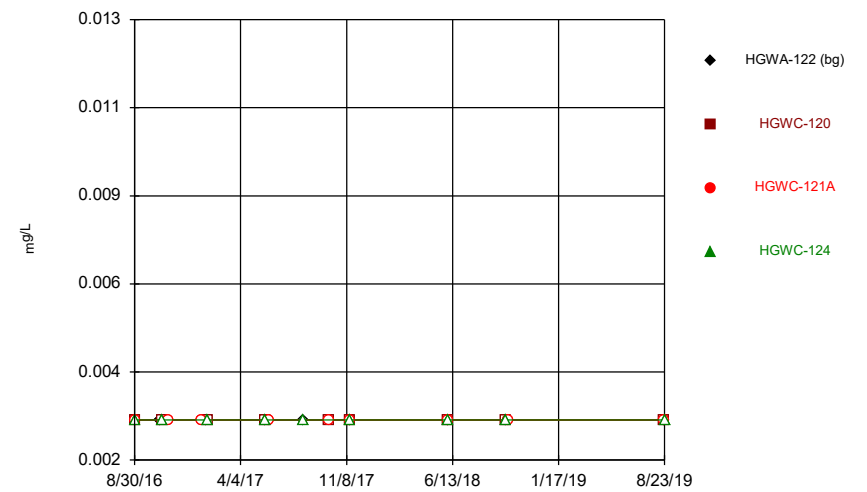
Constituent: Arsenic Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



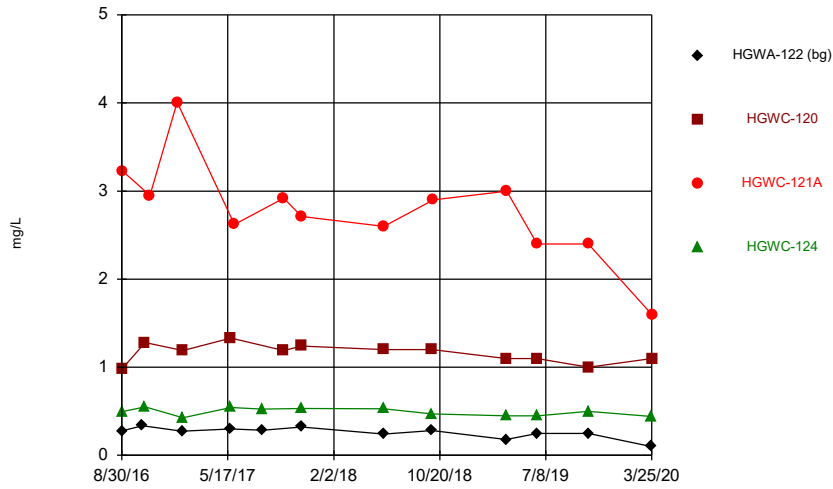
Constituent: Barium Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



Constituent: Beryllium Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

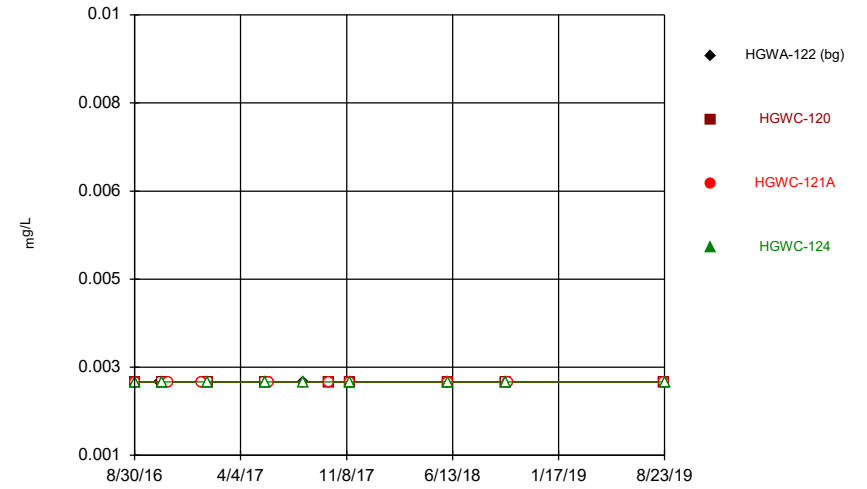
Time Series



Constituent: Boron Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

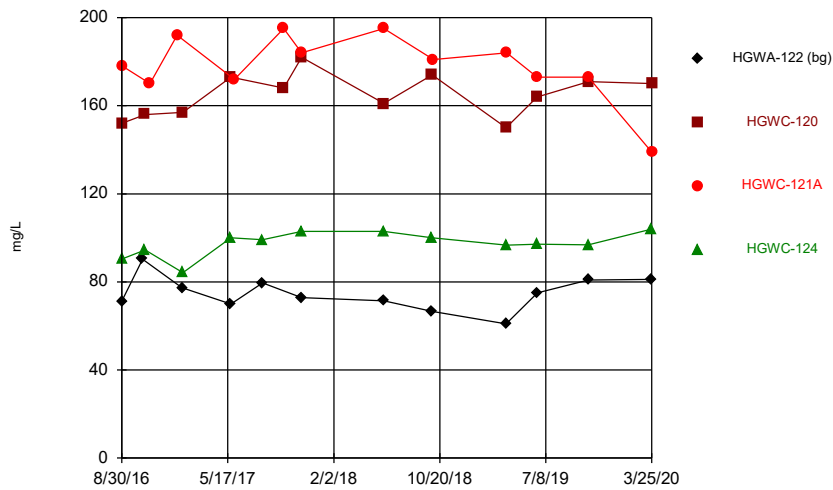
Hollow symbols indicate censored values.

Time Series



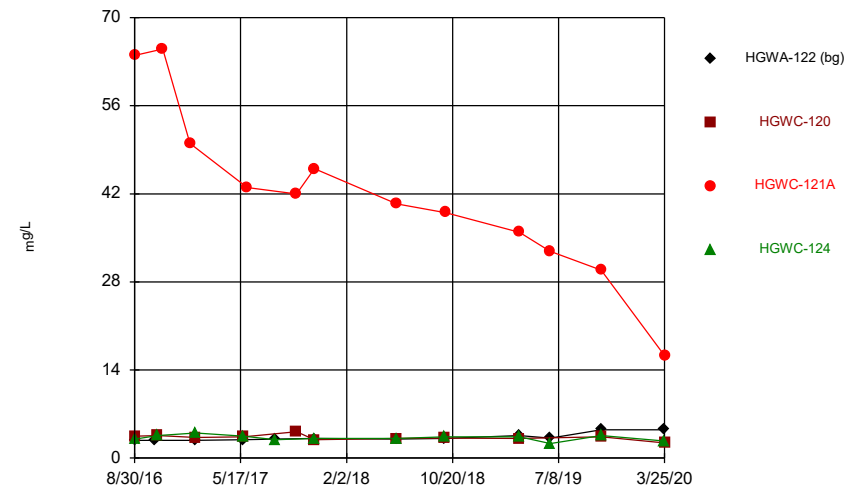
Constituent: Cadmium Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



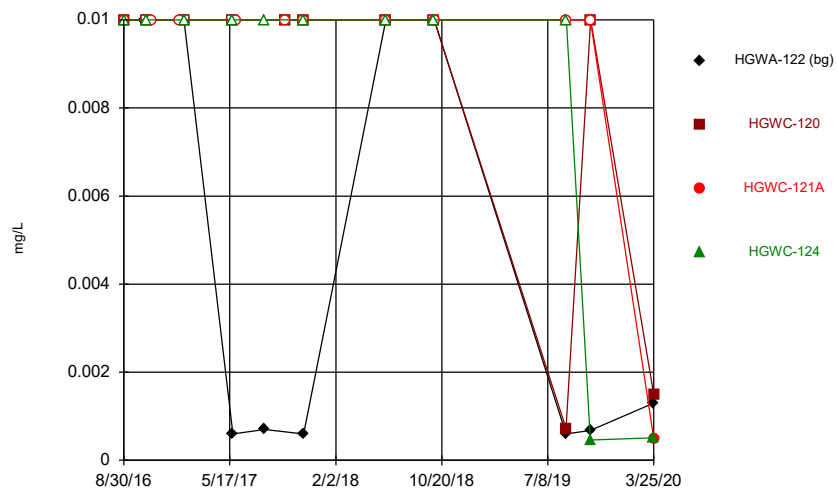
Constituent: Calcium Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



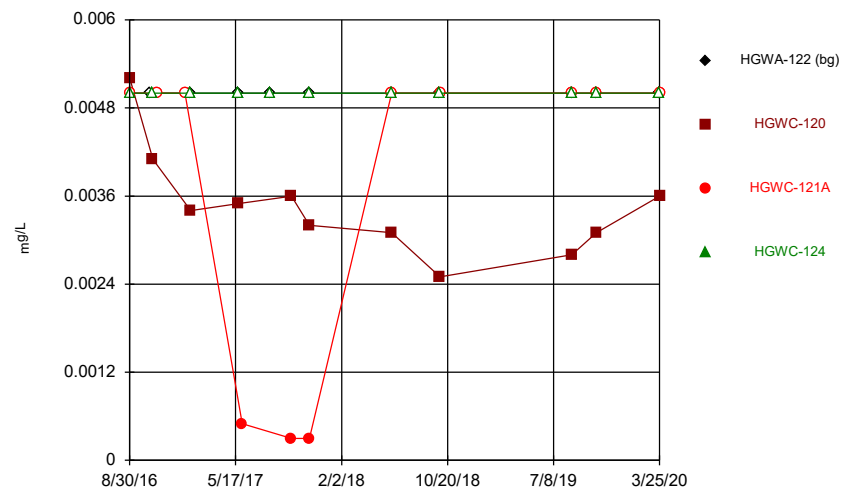
Constituent: Chloride Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



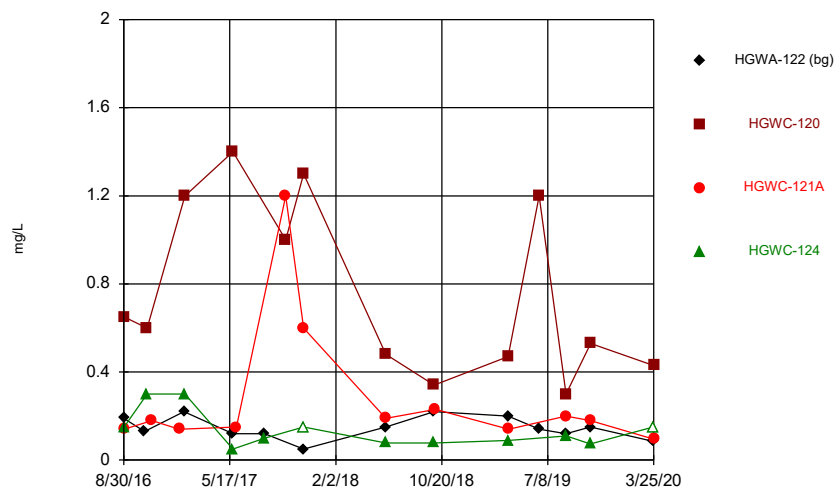
Constituent: Chromium Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



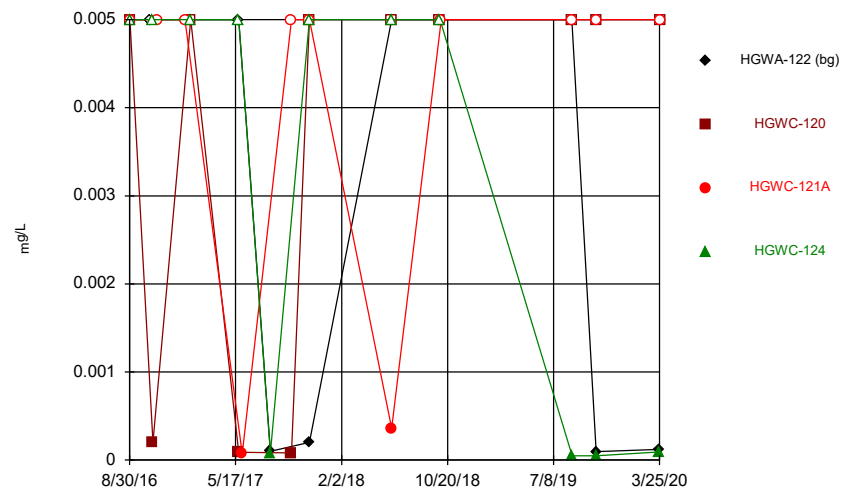
Constituent: Cobalt Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



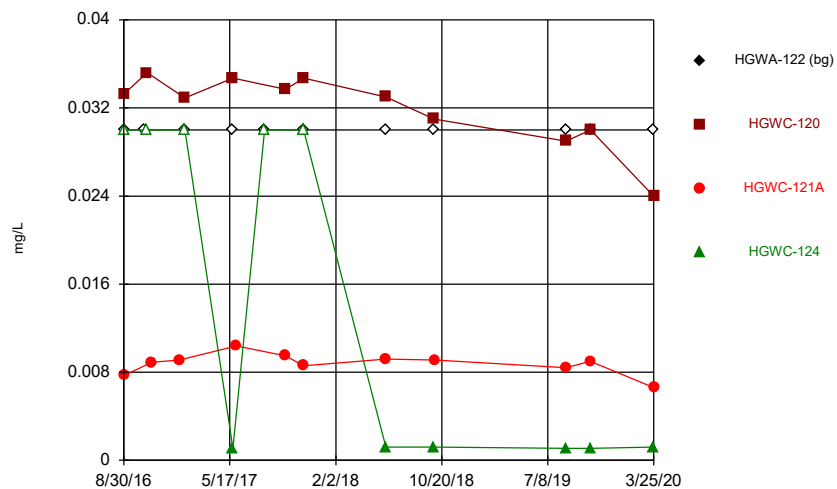
Constituent: Fluoride Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



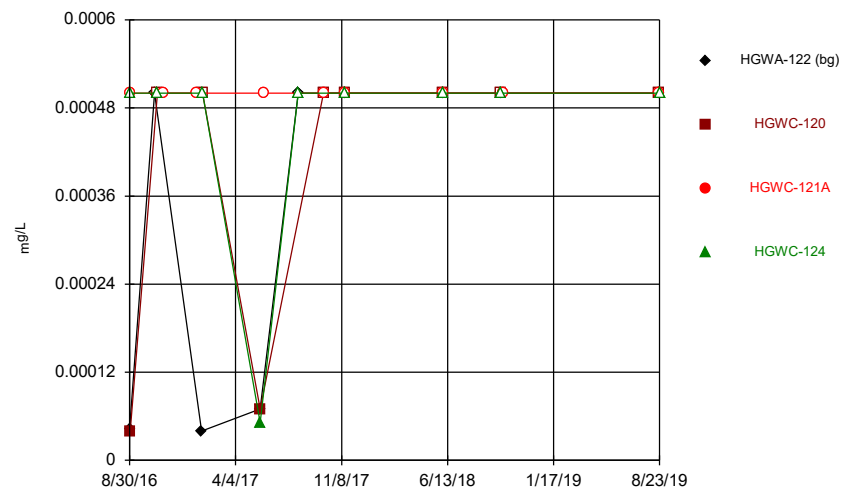
Constituent: Lead Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



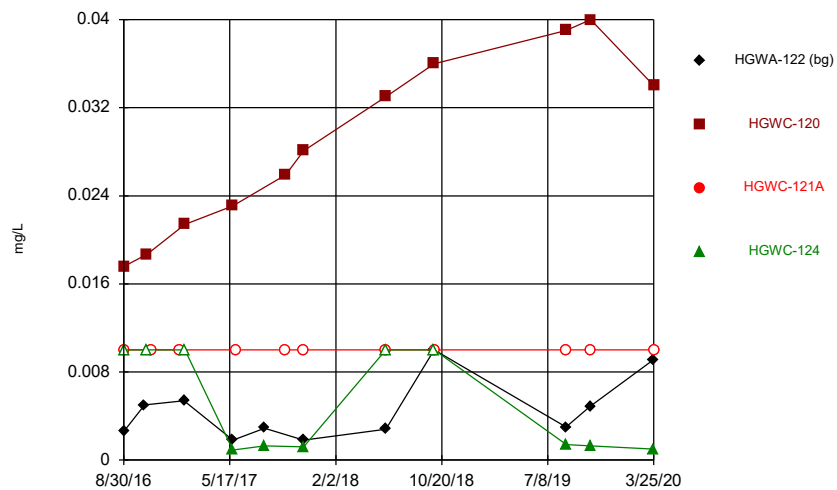
Constituent: Lithium Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



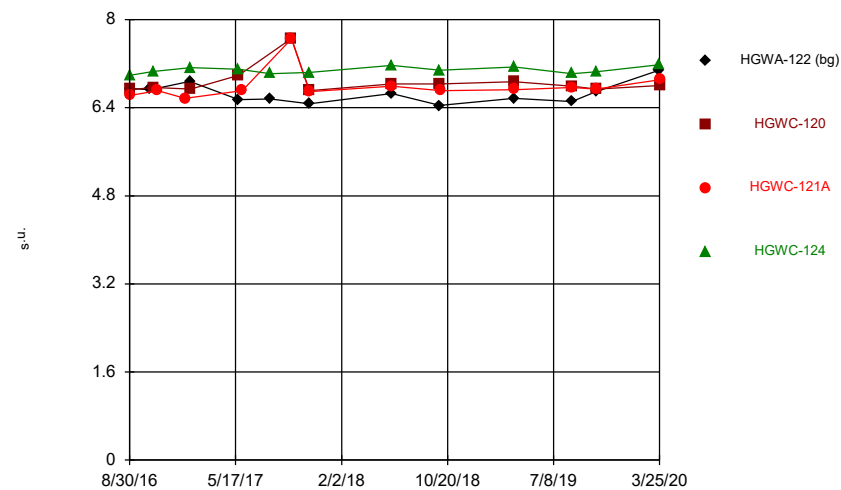
Constituent: Mercury Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



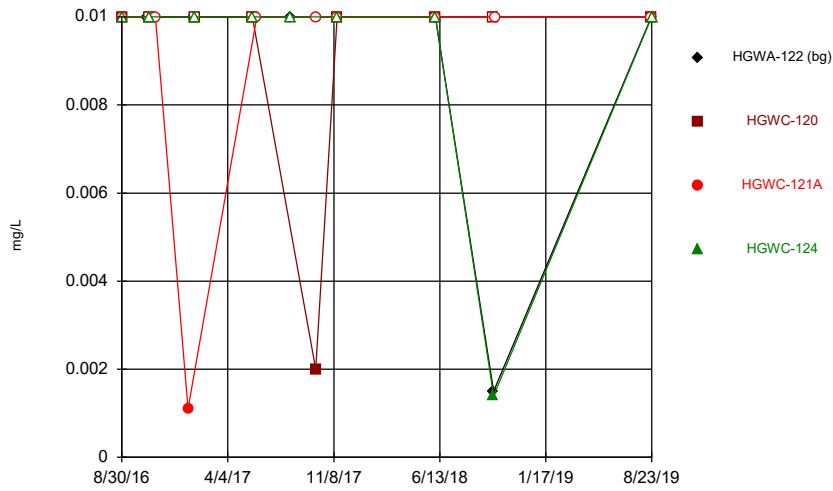
Constituent: Molybdenum Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



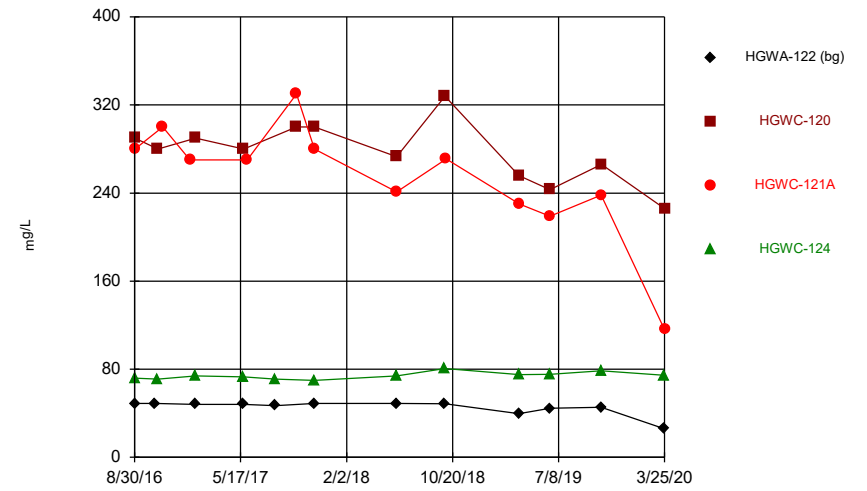
Constituent: pH Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



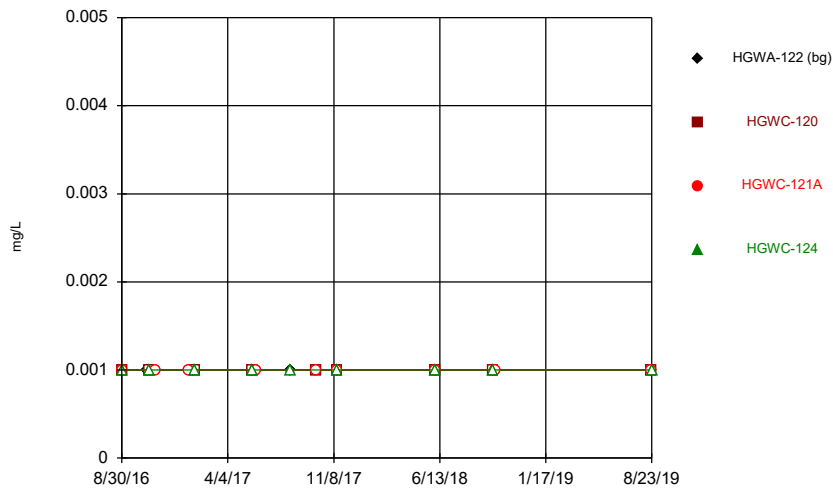
Constituent: Selenium Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



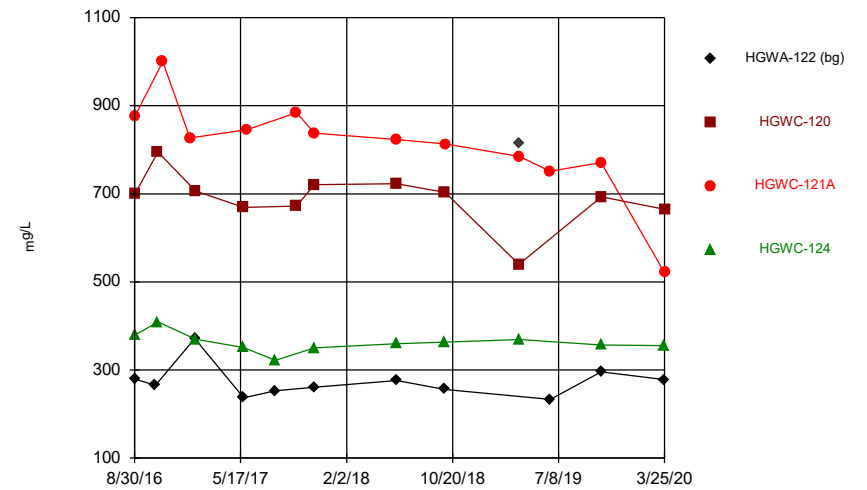
Constituent: Sulfate Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



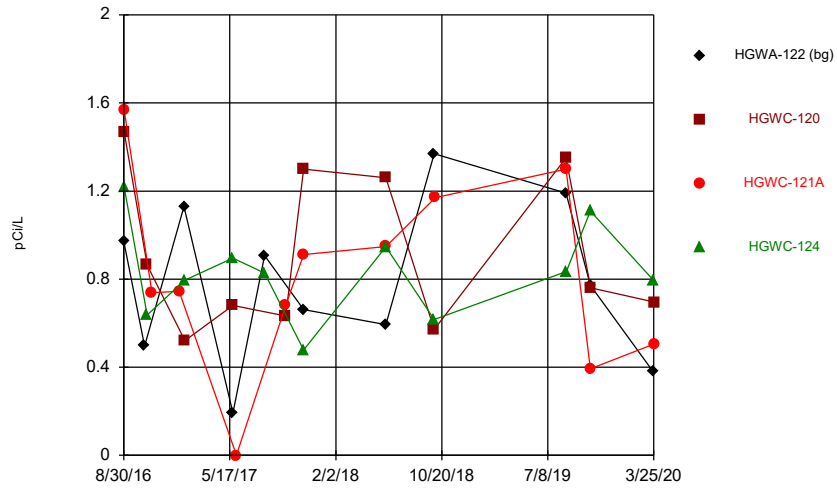
Constituent: Thallium Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



Constituent: Total Dissolved Solids Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series



Constituent: Total Radium Analysis Run 6/26/2020 4:22 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Time Series

Constituent: Antimony (mg/L) Analysis Run 6/26/2020 4:22 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.003			
8/31/2016		<0.003	<0.003	<0.003
10/20/2016	<0.003			
10/26/2016		<0.003		<0.003
11/7/2016			<0.003	
1/13/2017			<0.003	
1/25/2017	<0.003			
1/27/2017		<0.003		<0.003
5/25/2017	<0.003	<0.003		<0.003
6/3/2017			<0.003	
8/11/2017	<0.003			<0.003
10/2/2017		<0.003	<0.003	
11/15/2017	<0.003	<0.003	<0.003	<0.003
6/5/2018	<0.003	<0.003	<0.003	<0.003
10/2/2018	<0.003	<0.003		<0.003
10/5/2018			<0.003	
8/22/2019	<0.003	<0.003	<0.003	
8/23/2019				<0.003

Time Series

Constituent: Arsenic (mg/L) Analysis Run 6/26/2020 4:22 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.005			
8/31/2016		<0.005	<0.005	<0.005
10/20/2016	<0.005			
10/26/2016		<0.005		<0.005
11/7/2016			<0.005	
1/13/2017			<0.005	
1/25/2017	<0.005			
1/27/2017		<0.005		<0.005
5/25/2017	<0.005	0.0014 (J)		0.0006 (J)
6/3/2017			0.001 (J)	
8/11/2017	<0.005			<0.005
10/2/2017		0.0007 (J)	<0.005	
11/15/2017	<0.005	<0.005	<0.005	<0.005
6/5/2018	<0.005	0.001 (J)	0.0014 (J)	<0.005
10/2/2018	<0.005	<0.005		<0.005
10/5/2018			<0.005	
8/22/2019	<0.005	<0.005	<0.005	
8/23/2019				<0.005

Time Series

Constituent: Barium (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	0.0463			
8/31/2016		0.045	0.0782	0.0744
10/20/2016	0.0431			
10/26/2016		0.0462		0.0735
11/7/2016			0.0764	
1/13/2017			0.0744	
1/25/2017	0.0429			
1/27/2017		0.0451		0.0632
5/25/2017	0.0447	0.0488		0.0773
6/3/2017			0.0933	
8/11/2017	0.0451			0.0672
10/2/2017		0.0479	0.0815	
11/15/2017	0.0439	0.051	0.0807	0.0707
6/5/2018	0.04	0.051	0.078	0.07
10/2/2018	0.042	0.059		0.067
10/5/2018			0.074	
8/22/2019	0.044	0.05	0.066	
8/23/2019				0.066
10/21/2019	0.04		0.074	0.075
10/22/2019		0.051		
3/24/2020	0.032			0.075
3/25/2020		0.052	0.099	

Time Series

Constituent: Beryllium (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.003			
8/31/2016		<0.003	<0.003	<0.003
10/20/2016	<0.003			
10/26/2016		<0.003		<0.003
11/7/2016			<0.003	
1/13/2017			<0.003	
1/25/2017	<0.003			
1/27/2017		<0.003		<0.003
5/25/2017	<0.003	<0.003		<0.003
6/3/2017			<0.003	
8/11/2017	<0.003			<0.003
10/2/2017		<0.003	<0.003	
11/15/2017	<0.003	<0.003	<0.003	<0.003
6/5/2018	<0.003	<0.003	<0.003	<0.003
10/2/2018	<0.003	<0.003		<0.003
10/5/2018			<0.003	
8/22/2019	<0.003	<0.003	<0.003	
8/23/2019				<0.003

Time Series

Constituent: Boron (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	0.277			
8/31/2016		0.981	3.23	0.494
10/20/2016	0.336			
10/26/2016		1.28		0.55
11/7/2016			2.95	
1/13/2017			4.01	
1/25/2017	0.274			
1/27/2017		1.19		0.428
5/25/2017	0.298	1.33		0.544
6/3/2017			2.62	
8/11/2017	0.285			0.524
10/2/2017		1.19	2.92	
11/15/2017	0.322	1.24	2.71	0.531
6/5/2018	0.24	1.2	2.6	0.53
10/2/2018	0.28	1.2		0.47
10/5/2018			2.9	
4/2/2019	0.18	1.1		
4/3/2019			3	0.45
6/17/2019		1.1	2.4	
6/18/2019	0.25			0.45
10/21/2019	0.25		2.4	0.5
10/22/2019		1		
3/24/2020	0.1			0.44
3/25/2020		1.1	1.6	

Time Series

Constituent: Cadmium (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.0025			
8/31/2016		<0.0025	<0.0025	<0.0025
10/20/2016	<0.0025			
10/26/2016		<0.0025		<0.0025
11/7/2016			<0.0025	
1/13/2017			<0.0025	
1/25/2017	<0.0025			
1/27/2017		<0.0025		<0.0025
5/25/2017	<0.0025	<0.0025		<0.0025
6/3/2017			<0.0025	
8/11/2017	<0.0025			<0.0025
10/2/2017		<0.0025	<0.0025	
11/15/2017	<0.0025	<0.0025	<0.0025	<0.0025
6/5/2018	<0.0025	<0.0025	<0.0025	<0.0025
10/2/2018	<0.0025	<0.0025		<0.0025
10/5/2018			<0.0025	
8/22/2019	<0.0025	<0.0025	<0.0025	
8/23/2019				<0.0025

Time Series

Constituent: Calcium (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	71.3			
8/31/2016		152	178	90.4
10/20/2016	90.3			
10/26/2016		156		94.5
11/7/2016			170	
1/13/2017			192	
1/25/2017	77.3			
1/27/2017		157		84.2
5/25/2017	69.9	173		100
6/3/2017			172	
8/11/2017	79.5			99.1
10/2/2017		168	195	
11/15/2017	72.8	182	184	103
6/5/2018	71.4	161	195	103
10/2/2018	66.6	174		100
10/5/2018			181	
4/2/2019	60.9	150		
4/3/2019			184	96.7
6/17/2019		164	173	
6/18/2019	75			97.1
10/21/2019	80.8		173	96.9
10/22/2019		171		
3/24/2020	81.2			104
3/25/2020		170	139	

Time Series

Constituent: Chloride (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	2.8			
8/31/2016		3.5	64	3
10/20/2016	2.8			
10/26/2016		3.6		3.6
11/7/2016			65	
1/13/2017			50	
1/25/2017	2.8			
1/27/2017		3.3		4
5/25/2017	2.9	3.4		3.5
6/3/2017			43	
8/11/2017	3			2.9
10/2/2017		4.2	42	
11/15/2017	3.1	2.9	46	3.1
6/5/2018	3	3.1	40.4	3.1
10/2/2018	3.1	3.2		3.4
10/5/2018			39	
4/2/2019	3.6	3.1		
4/3/2019			35.9	3.4
6/17/2019			32.9	
6/18/2019	3.2			2.3 (J)
10/21/2019	4.5		29.9	3.6
10/22/2019		3.4		
3/24/2020	4.5			2.7
3/25/2020		2.4	16.3	

Time Series

Constituent: Chromium (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.01			
8/31/2016		<0.01	<0.01	<0.01
10/20/2016	<0.01			
10/26/2016		<0.01		<0.01
11/7/2016			<0.01	
1/13/2017			<0.01	
1/25/2017	<0.01			
1/27/2017		<0.01		<0.01
5/25/2017	0.0006 (J)	<0.01		<0.01
6/3/2017			<0.01	
8/11/2017	0.0007 (J)			<0.01
10/2/2017		<0.01	<0.01	
11/15/2017	0.0006 (J)	<0.01	<0.01	<0.01
6/5/2018	<0.01	<0.01	<0.01	<0.01
10/2/2018	<0.01	<0.01		<0.01
10/5/2018			<0.01	
8/22/2019	0.0006 (J)	0.00072 (J)	<0.01	
8/23/2019				<0.01
10/21/2019	0.00068 (J)		<0.01	0.00046 (J)
10/22/2019		<0.01		
3/24/2020	0.0013 (J)			0.00051 (J)
3/25/2020		0.0015 (J)	0.0005 (J)	

Time Series

Constituent: Cobalt (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.005			
8/31/2016		0.0052 (J)	<0.005	<0.005
10/20/2016	<0.005			
10/26/2016		0.0041 (J)		<0.005
11/7/2016			<0.005	
1/13/2017			<0.005	
1/25/2017	<0.005			
1/27/2017		0.0034 (J)		<0.005
5/25/2017	<0.005	0.0035 (J)		<0.005
6/3/2017			0.0005 (J)	
8/11/2017	<0.005			<0.005
10/2/2017		0.0036 (J)	0.0003 (J)	
11/15/2017	<0.005	0.0032 (J)	0.0003 (J)	<0.005
6/5/2018	<0.005	0.0031 (J)	<0.005	<0.005
10/2/2018	<0.005	0.0025 (J)		<0.005
10/5/2018			<0.005	
8/22/2019	<0.005	0.0028 (J)	<0.005	
8/23/2019				<0.005
10/21/2019	<0.005		<0.005	<0.005
10/22/2019		0.0031 (J)		
3/24/2020	<0.005			<0.005
3/25/2020		0.0036 (J)	<0.005	

Time Series

Constituent: Fluoride (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	0.19 (J)			
8/31/2016		0.65	0.14 (J)	0.15 (J)
10/20/2016	0.13 (J)			
10/26/2016		0.6		0.3
11/7/2016			0.18 (J)	
1/13/2017			0.14 (J)	
1/25/2017	0.22 (J)			
1/27/2017		1.2		0.3
5/25/2017	0.12 (J)	1.4		0.05 (J)
6/3/2017			0.15 (J)	
8/11/2017	0.12 (J)			0.1 (J)
10/2/2017		1	1.2	
11/15/2017	0.05 (J)	1.3	0.6	<0.3
6/5/2018	0.15 (J)	0.48	0.19 (J)	0.078 (J)
10/2/2018	0.22 (J)	0.34		0.078 (J)
10/5/2018			0.23 (J)	
4/2/2019	0.2 (J)	0.47		
4/3/2019			0.14 (J)	0.089 (J)
6/17/2019		1.2		
6/18/2019	0.14 (J)			
8/22/2019	0.12 (J)	0.3 (J)	0.2 (J)	
8/23/2019				0.11 (J)
10/21/2019	0.15 (J)		0.18 (J)	0.073 (J)
10/22/2019		0.53		
3/24/2020	0.085 (J)			<0.3
3/25/2020		0.43	0.095 (J)	

Time Series

Constituent: Lead (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.005			
8/31/2016		<0.005	<0.005	<0.005
10/20/2016	<0.005			
10/26/2016		0.0002 (J)		<0.005
11/7/2016			<0.005	
1/13/2017			<0.005	
1/25/2017	<0.005			
1/27/2017		<0.005		<0.005
5/25/2017	<0.005	9E-05 (J)		<0.005
6/3/2017			7E-05 (J)	
8/11/2017	0.0001 (J)			8E-05 (J)
10/2/2017		8E-05 (J)	<0.005	
11/15/2017	0.0002 (J)	<0.005	<0.005	<0.005
6/5/2018	<0.005	<0.005	0.00036 (J)	<0.005
10/2/2018	<0.005	<0.005		<0.005
10/5/2018			<0.005	
8/22/2019	<0.005	<0.005	<0.005	
8/23/2019				4.9E-05 (J)
10/21/2019	9.7E-05 (J)		<0.005	4.9E-05 (J)
10/22/2019		<0.005		
3/24/2020	0.00012 (J)			9.4E-05 (J)
3/25/2020		<0.005	<0.005	

Time Series

Constituent: Lithium (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.03			
8/31/2016		0.0333 (J)	0.0077 (J)	<0.03
10/20/2016	<0.03			
10/26/2016		0.0352 (J)		<0.03
11/7/2016			0.0089 (J)	
1/13/2017			0.0091 (J)	
1/25/2017	<0.03			
1/27/2017		0.0329 (J)		<0.03
5/25/2017	<0.03	0.0347 (J)		0.0011 (J)
6/3/2017			0.0104 (J)	
8/11/2017	<0.03			<0.03
10/2/2017		0.0337 (J)	0.0095 (J)	
11/15/2017	<0.03	0.0347 (J)	0.0086 (J)	<0.03
6/5/2018	<0.03	0.033 (J)	0.0092 (J)	0.0012 (J)
10/2/2018	<0.03	0.031 (J)		0.0012 (J)
10/5/2018			0.0091 (J)	
8/22/2019	<0.03	0.029 (J)	0.0084 (J)	
8/23/2019				0.0011 (J)
10/21/2019	<0.03		0.009 (J)	0.0011 (J)
10/22/2019		0.03 (J)		
3/24/2020	<0.03			0.0012 (J)
3/25/2020		0.024 (J)	0.0066 (J)	

Time Series

Constituent: Mercury (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	4.3E-05 (J)			
8/31/2016		4E-05 (J)	<0.0005	<0.0005
10/20/2016	<0.0005			
10/26/2016		<0.0005		<0.0005
11/7/2016			<0.0005	
1/13/2017			<0.0005	
1/25/2017	4E-05 (J)			
1/27/2017		<0.0005		<0.0005
5/25/2017	7E-05 (J)	7E-05 (J)		5.1E-05 (J)
6/3/2017			<0.0005	
8/11/2017	<0.0005			<0.0005
10/2/2017		<0.0005	<0.0005	
11/15/2017	<0.0005	<0.0005	<0.0005	<0.0005
6/5/2018	<0.0005	<0.0005	<0.0005	<0.0005
10/2/2018	<0.0005	<0.0005		<0.0005
10/5/2018			<0.0005	
8/22/2019	<0.0005	<0.0005	<0.0005	
8/23/2019				<0.0005

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	0.0026 (J)			
8/31/2016		0.0176	<0.01	<0.01
10/20/2016	0.005 (J)			
10/26/2016		0.0187		<0.01
11/7/2016			<0.01	
1/13/2017			<0.01	
1/25/2017	0.0054 (J)			
1/27/2017		0.0214		<0.01
5/25/2017	0.0018 (J)	0.0231		0.0009 (J)
6/3/2017			<0.01	
8/11/2017	0.0029 (J)			0.0013 (J)
10/2/2017		0.0259	<0.01	
11/15/2017	0.0018 (J)	0.0281	<0.01	0.0012 (J)
6/5/2018	0.0028 (J)	0.033	<0.01	<0.01
10/2/2018	<0.01	0.036		<0.01
10/5/2018			<0.01	
8/22/2019	0.003 (J)	0.039	<0.01	
8/23/2019				0.0014 (J)
10/21/2019	0.0049 (J)		<0.01	0.0013 (J)
10/22/2019		0.04		
3/24/2020	0.0091 (J)			0.001 (J)
3/25/2020		0.034	<0.01	

Time Series

Constituent: pH (s.u.) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	6.75			
8/31/2016		6.73	6.62	6.99
10/20/2016	6.73			
10/27/2016		6.77		7.06
11/7/2016			6.71	
1/13/2017			6.57	
1/25/2017	6.88			
1/27/2017		6.74		7.13
5/25/2017	6.55	6.99		7.1
6/3/2017			6.71	
8/11/2017	6.56			7.02
10/2/2017		7.66	7.65	
11/15/2017	6.47	6.71	6.69	7.04
6/5/2018	6.66	6.83	6.79	7.17
10/2/2018	6.44	6.83		7.08
10/5/2018			6.71	
4/2/2019	6.57	6.87		
4/3/2019			6.73	7.14
8/22/2019	6.51	6.79	6.77	
8/23/2019				7.02
10/21/2019	6.69		6.74	7.05
10/22/2019		6.74		
3/24/2020	7.08			7.18
3/25/2020		6.8	6.91	

Time Series

Constituent: Selenium (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.01			
8/31/2016		<0.01	<0.01	<0.01
10/20/2016	<0.01			
10/26/2016		<0.01		<0.01
11/7/2016			<0.01	
1/13/2017			0.0011 (J)	
1/25/2017	<0.01			
1/27/2017		<0.01		<0.01
5/25/2017	<0.01	<0.01		<0.01
6/3/2017			<0.01	
8/11/2017	<0.01			<0.01
10/2/2017		0.002 (J)	<0.01	
11/15/2017	<0.01	<0.01	<0.01	<0.01
6/5/2018	<0.01	<0.01	<0.01	<0.01
10/2/2018	0.0015 (J)	<0.01		0.0014 (J)
10/5/2018			<0.01	
8/22/2019	<0.01	<0.01	<0.01	
8/23/2019				<0.01

Time Series

Constituent: Sulfate (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	49			
8/31/2016		290	280	72
10/20/2016	49			
10/26/2016		280		71
11/7/2016			300	
1/13/2017			270	
1/25/2017	48			
1/27/2017		290		74
5/25/2017	48	280		73
6/3/2017			270	
8/11/2017	47			71
10/2/2017		300	330	
11/15/2017	49	300	280	70
6/5/2018	48.9	273	241	74
10/2/2018	48.6	328		80.7
10/5/2018			271	
4/2/2019	39.6	256		
4/3/2019			230	75.2
6/17/2019		243	219	
6/18/2019	44.5			75.3
10/21/2019	45.6		238	78.5
10/22/2019		266		
3/24/2020	25.9			74.6
3/25/2020		226	116	

Time Series

Constituent: Thallium (mg/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	<0.001			
8/31/2016		<0.001	<0.001	<0.001
10/20/2016	<0.001			
10/26/2016		<0.001		<0.001
11/7/2016			<0.001	
1/13/2017			<0.001	
1/25/2017	<0.001			
1/27/2017		<0.001		<0.001
5/25/2017	<0.001	<0.001		<0.001
6/3/2017			<0.001	
8/11/2017	<0.001			<0.001
10/2/2017		<0.001	<0.001	
11/15/2017	<0.001	<0.001	<0.001	<0.001
6/5/2018	<0.001	<0.001	<0.001	<0.001
10/2/2018	<0.001	<0.001		<0.001
10/5/2018			<0.001	
8/22/2019	<0.001	<0.001	<0.001	
8/23/2019				<0.001

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 6/26/2020 4:23 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	280			
8/31/2016		700	876	379
10/20/2016	265			
10/26/2016		795		409
11/7/2016			1000	
1/13/2017			827	
1/25/2017	371			
1/27/2017		706		370
5/25/2017	237	669		351
6/3/2017			846	
8/11/2017	253			322
10/2/2017		672	884	
11/15/2017	261	721	838	350
6/5/2018	276	723	823	360
10/2/2018	256	703		363
10/5/2018			813	
4/2/2019	814 (o)	540		
4/3/2019			785	369
6/17/2019			751	
6/18/2019	233			
10/21/2019	296		771	357
10/22/2019		693		
3/24/2020	278			355
3/25/2020		665	521	

Time Series

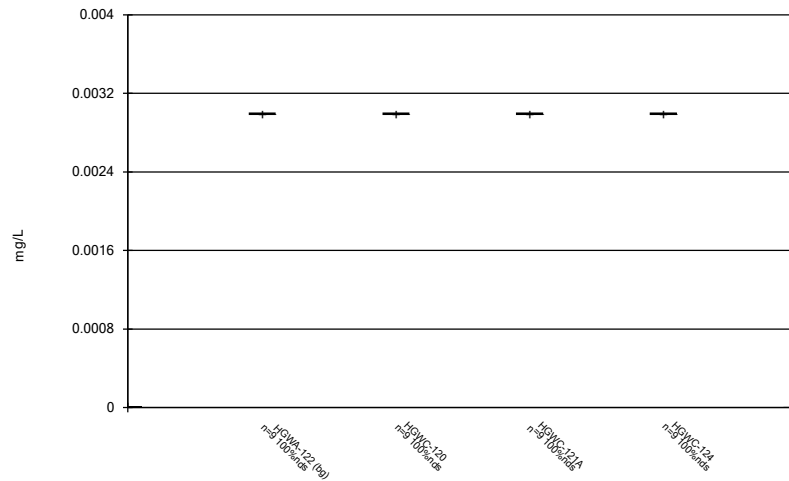
Constituent: Total Radium (pCi/L) Analysis Run 6/26/2020 4:23 PM

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	HGWC-120	HGWC-121A	HGWC-124
8/30/2016	0.972 (U)			
8/31/2016		1.47	1.57	1.22
10/20/2016	0.496 (U)			
10/26/2016		0.864 (U)		0.637 (U)
11/7/2016			0.739 (U)	
1/13/2017			0.744 (U)	
1/25/2017	1.13 (U)			
1/27/2017		0.521 (U)		0.795 (U)
5/25/2017	0.192 (U)	0.681 (U)		0.896 (U)
6/3/2017			0 (U)	
8/11/2017	0.908 (U)			0.828 (U)
10/2/2017		0.632 (U)	0.68 (U)	
11/15/2017	0.662 (U)	1.3	0.911 (U)	0.478 (U)
6/5/2018	0.593 (U)	1.26 (U)	0.948 (U)	0.947 (U)
10/2/2018	1.37	0.572 (U)		0.617 (U)
10/5/2018			1.17 (U)	
8/22/2019	1.19 (U)	1.35	1.3	
8/23/2019				0.834
10/21/2019	0.772 (U)		0.393 (U)	1.11 (U)
10/22/2019		0.76 (U)		
3/24/2020	0.379 (U)			0.796 (U)
3/25/2020		0.696 (U)	0.505 (U)	

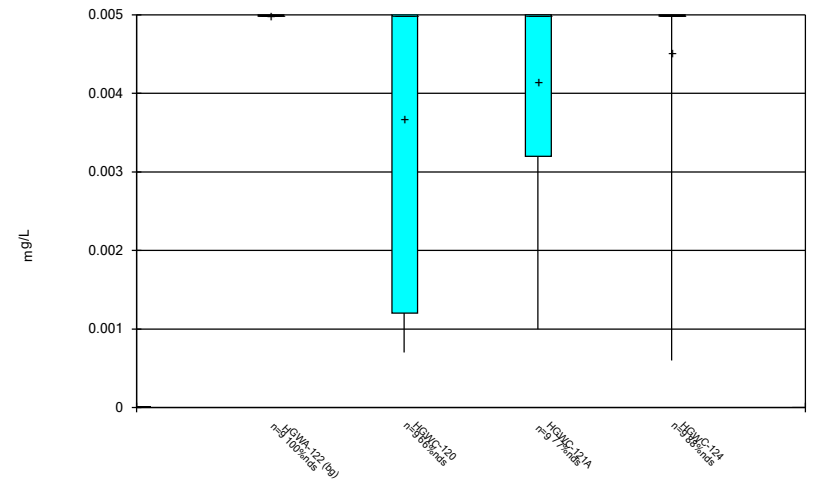
FIGURE B.

Box & Whiskers Plot



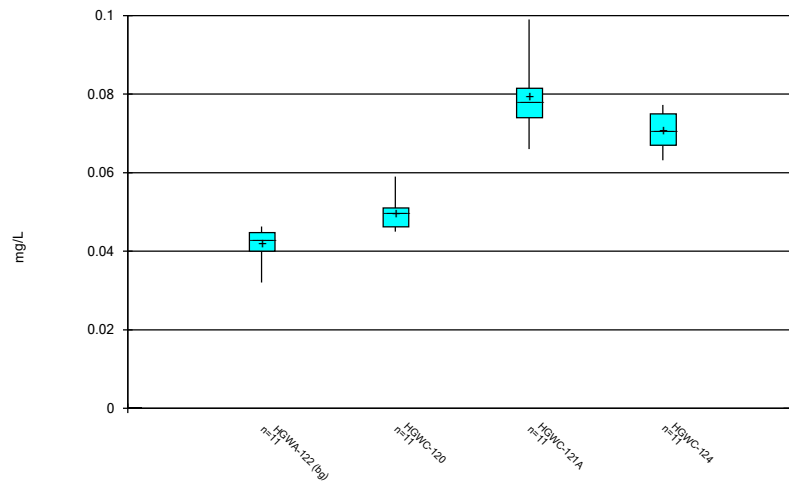
Constituent: Antimony Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



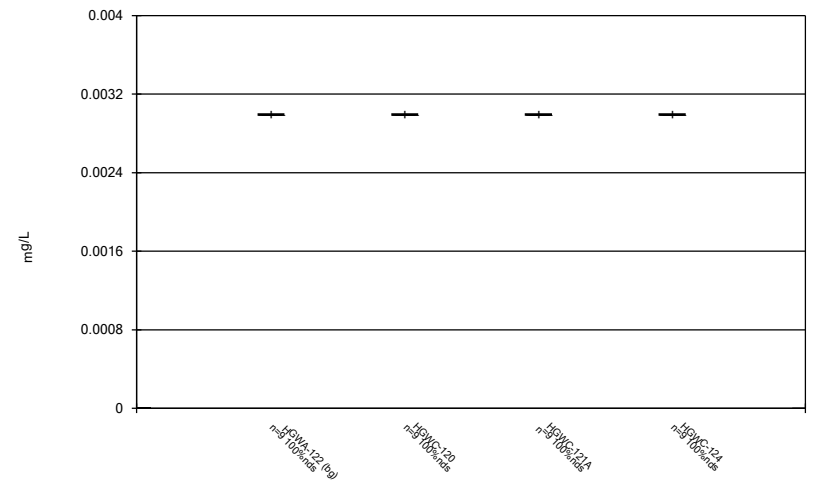
Constituent: Arsenic Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



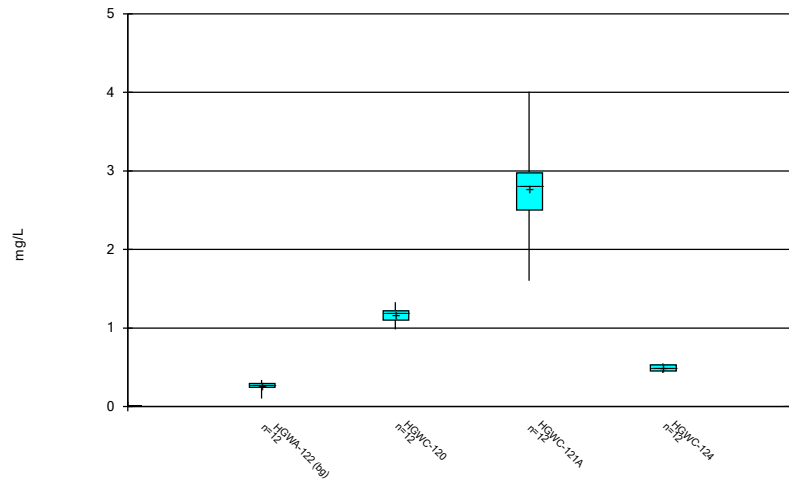
Constituent: Barium Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



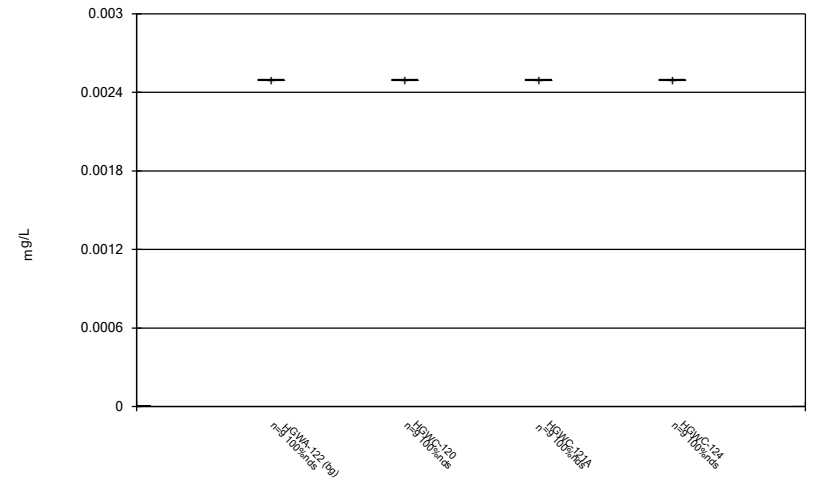
Constituent: Beryllium Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



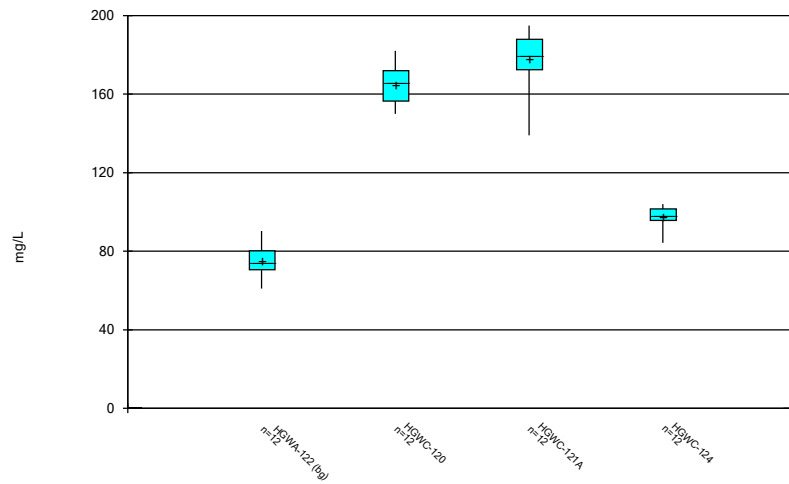
Constituent: Boron Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



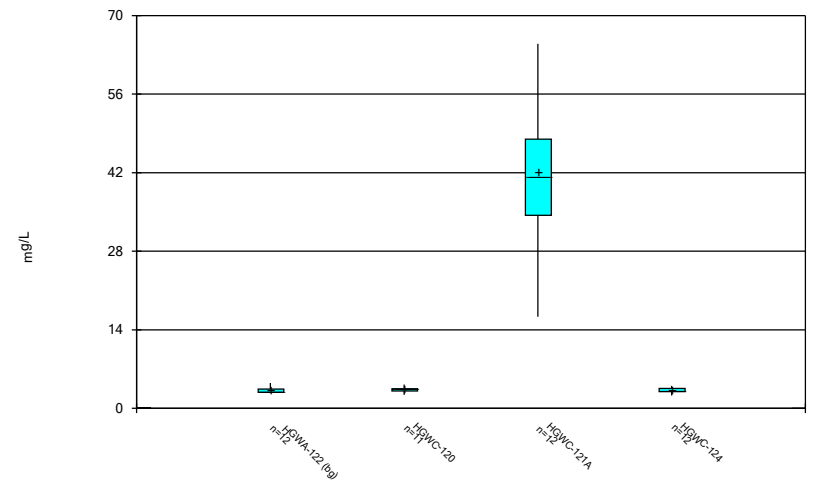
Constituent: Cadmium Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



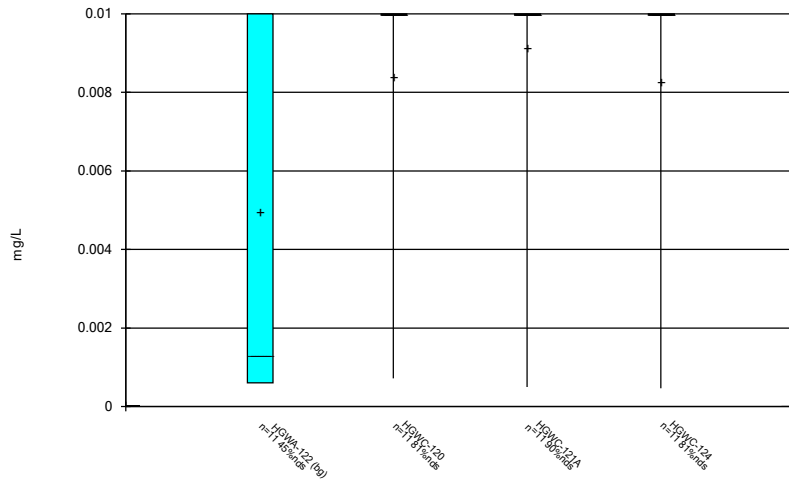
Constituent: Calcium Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



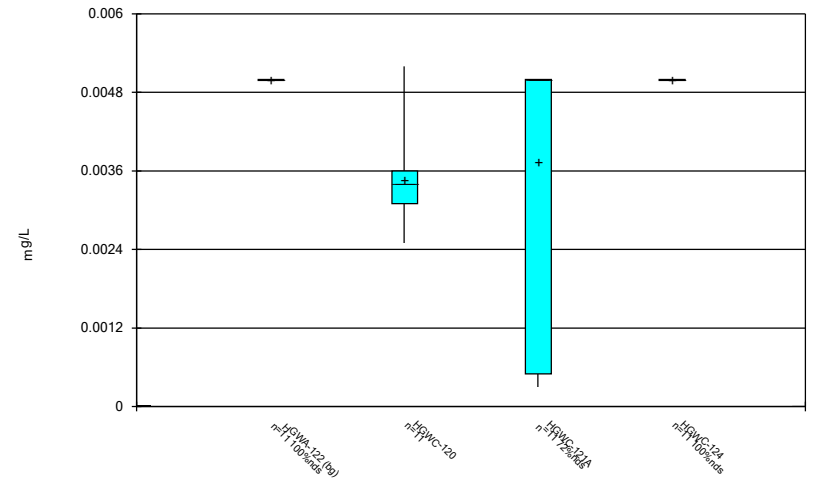
Constituent: Chloride Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



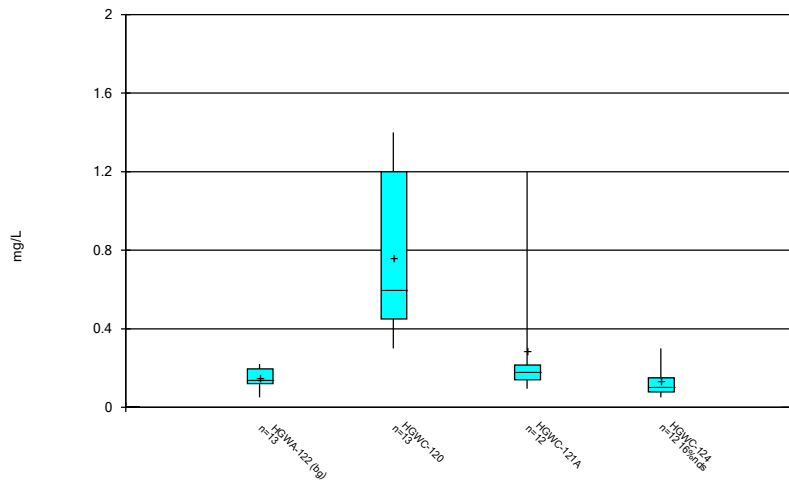
Constituent: Chromium Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



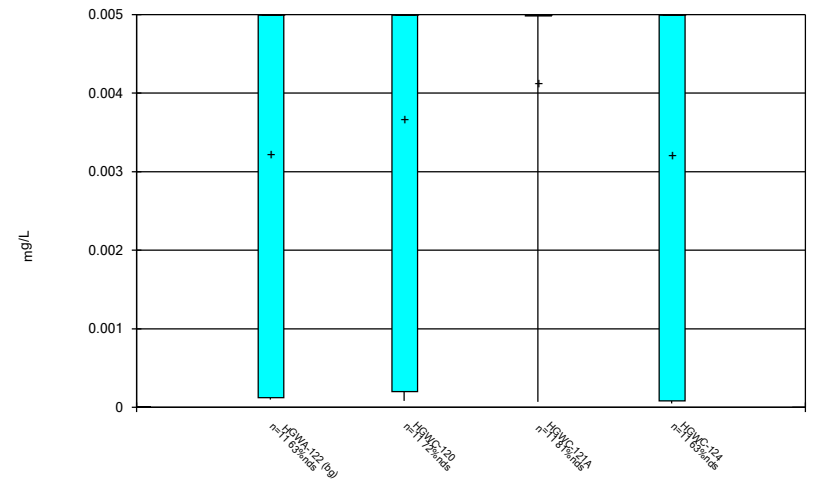
Constituent: Cobalt Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



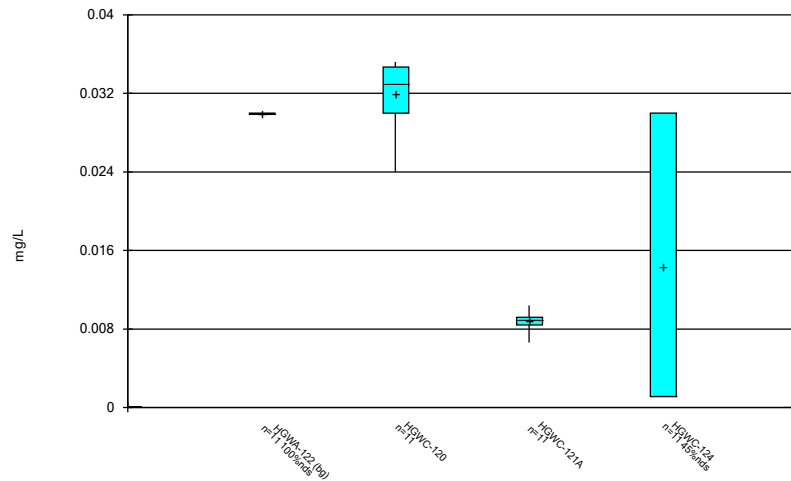
Constituent: Fluoride Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



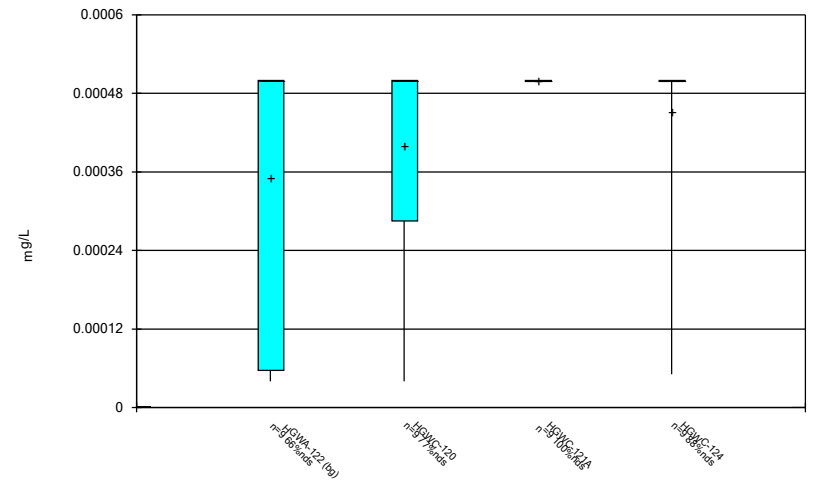
Constituent: Lead Analysis Run 6/26/2020 4:26 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



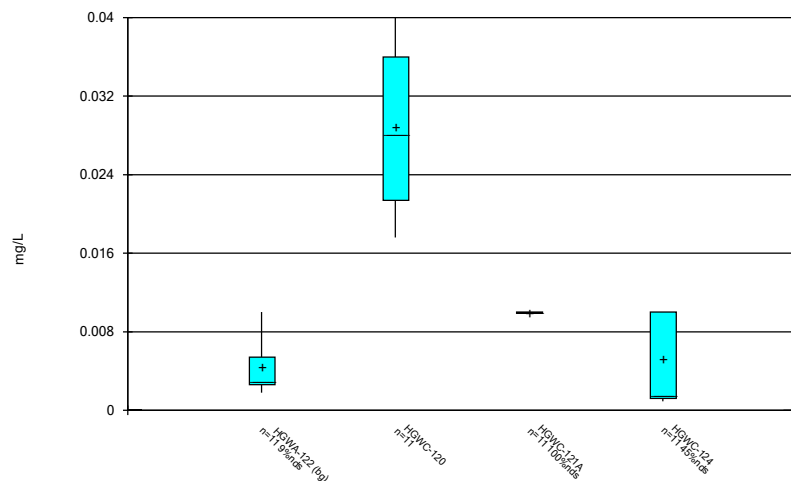
Constituent: Lithium Analysis Run 6/26/2020 4:26 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



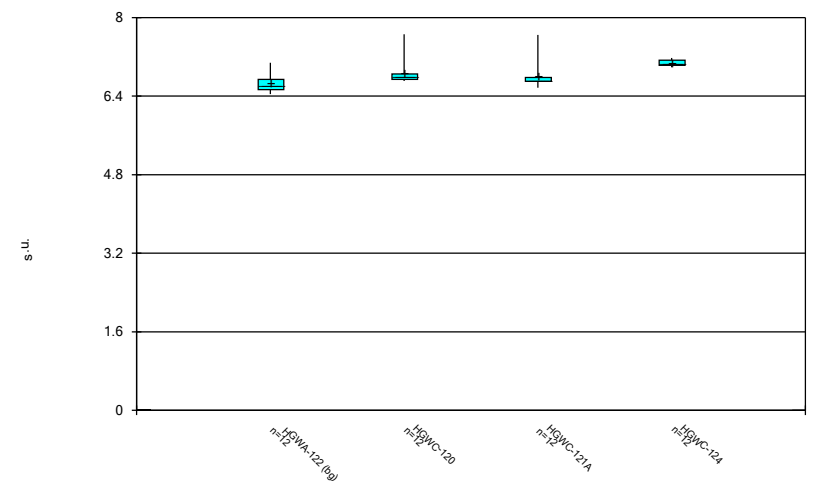
Constituent: Mercury Analysis Run 6/26/2020 4:26 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



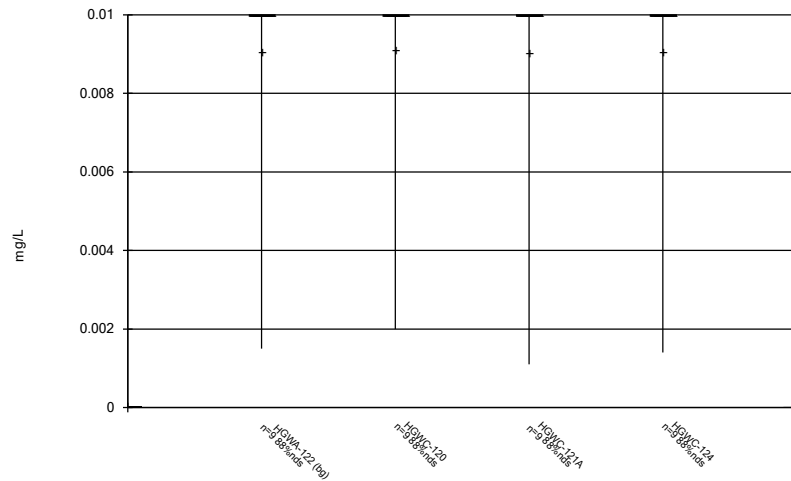
Constituent: Molybdenum Analysis Run 6/26/2020 4:26 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



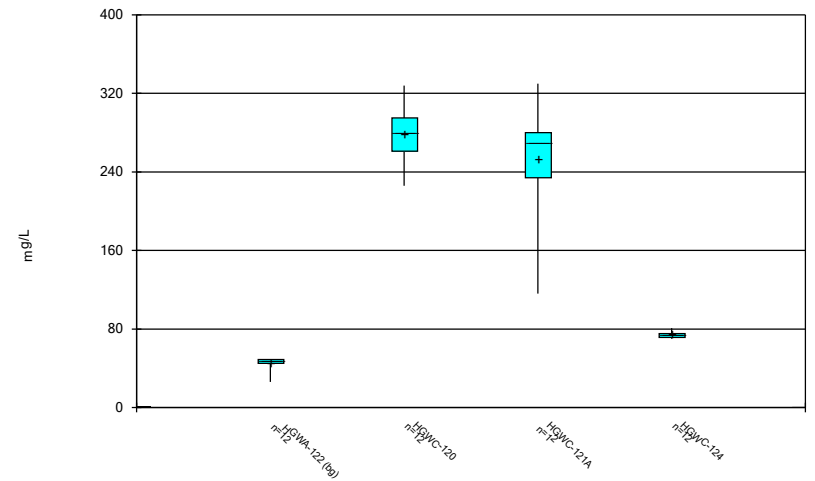
Constituent: pH Analysis Run 6/26/2020 4:26 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



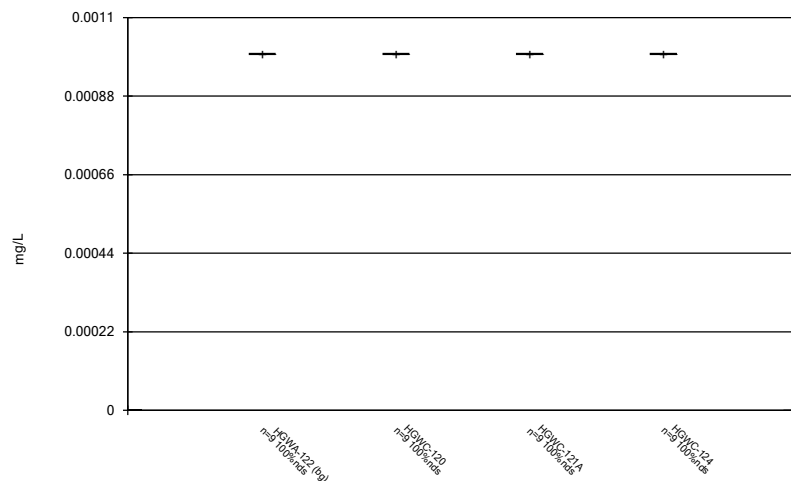
Constituent: Selenium Analysis Run 6/26/2020 4:26 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



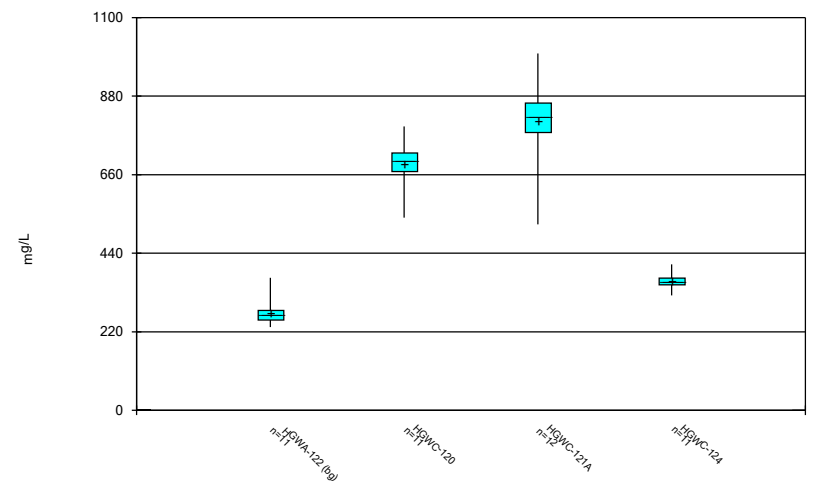
Constituent: Sulfate Analysis Run 6/26/2020 4:26 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



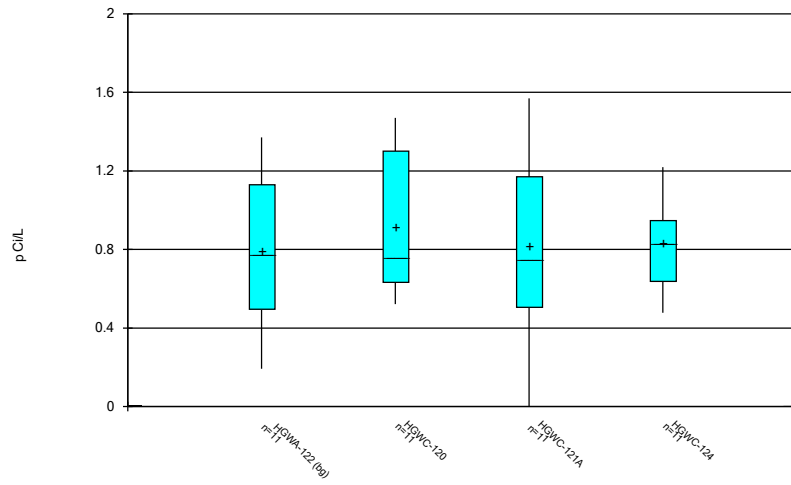
Constituent: Thallium Analysis Run 6/26/2020 4:26 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 6/26/2020 4:26 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Box & Whiskers Plot



Constituent: Total Radium Analysis Run 6/26/2020 4:26 PM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

FIGURE C.

Outlier Summary

Plant Hammond Client: Southern Company Data: Hammond AP-3 Printed 6/29/2020, 10:14 AM

HDWA-122 Total Dissolved Solids (mg/L)

4/2/2019

814 (o)

FIGURE D.

Interwell Prediction Limit Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 5/29/2020, 2:23 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-120	0.3919	n/a	3/25/2020	1.1	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	HGWC-121A	0.3919	n/a	3/25/2020	1.6	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	HGWC-124	0.3919	n/a	3/24/2020	0.44	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-120	90.96	n/a	3/25/2020	170	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-121A	90.96	n/a	3/25/2020	139	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-124	90.96	n/a	3/24/2020	104	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Chloride (mg/L)	HGWC-121A	4.5	n/a	3/25/2020	16.3	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Fluoride (mg/L)	HGWC-120	0.2507	n/a	3/25/2020	0.43	Yes	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
pH (s.u.)	HGWC-124	7.045	6.27	3/24/2020	7.18	Yes	12	6.658	0.1848	0	None	No	0.001253	Param Inter 1 of 2
Sulfate (mg/L)	HGWC-120	49	n/a	3/25/2020	226	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Sulfate (mg/L)	HGWC-121A	49	n/a	3/25/2020	116	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Sulfate (mg/L)	HGWC-124	49	n/a	3/24/2020	74.6	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Total Dissolved Solids (mg/L)	HGWC-120	353.9	n/a	3/25/2020	665	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-121A	353.9	n/a	3/25/2020	521	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-124	353.9	n/a	3/24/2020	355	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2

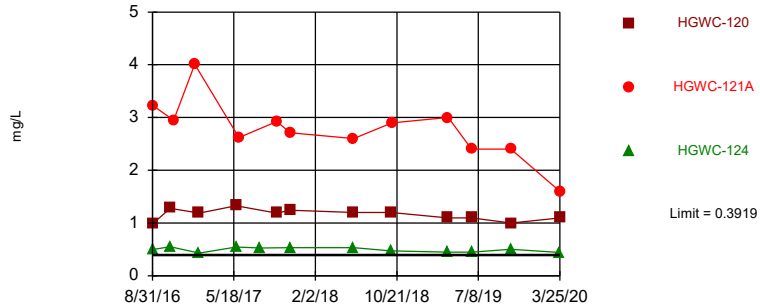
Interwell Prediction Limit Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 5/29/2020, 2:23 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-120	0.3919	n/a	3/25/2020	1.1	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	HGWC-121A	0.3919	n/a	3/25/2020	1.6	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	HGWC-124	0.3919	n/a	3/24/2020	0.44	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-120	90.96	n/a	3/25/2020	170	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-121A	90.96	n/a	3/25/2020	139	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	HGWC-124	90.96	n/a	3/24/2020	104	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Chloride (mg/L)	HGWC-120	4.5	n/a	3/25/2020	2.4	No	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Chloride (mg/L)	HGWC-121A	4.5	n/a	3/25/2020	16.3	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Chloride (mg/L)	HGWC-124	4.5	n/a	3/24/2020	2.7	No	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Fluoride (mg/L)	HGWC-120	0.2507	n/a	3/25/2020	0.43	Yes	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-121A	0.2507	n/a	3/25/2020	0.095	No	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-124	0.2507	n/a	3/24/2020	0.15ND	No	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
pH (s.u.)	HGWC-120	7.045	6.27	3/25/2020	6.8	No	12	6.658	0.1848	0	None	No	0.001253	Param Inter 1 of 2
pH (s.u.)	HGWC-121A	7.045	6.27	3/25/2020	6.91	No	12	6.658	0.1848	0	None	No	0.001253	Param Inter 1 of 2
pH (s.u.)	HGWC-124	7.045	6.27	3/24/2020	7.18	Yes	12	6.658	0.1848	0	None	No	0.001253	Param Inter 1 of 2
Sulfate (mg/L)	HGWC-120	49	n/a	3/25/2020	226	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Sulfate (mg/L)	HGWC-121A	49	n/a	3/25/2020	116	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Sulfate (mg/L)	HGWC-124	49	n/a	3/24/2020	74.6	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) ...
Total Dissolved Solids (mg/L)	HGWC-120	353.9	n/a	3/25/2020	665	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-121A	353.9	n/a	3/25/2020	521	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-124	353.9	n/a	3/24/2020	355	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2

Exceeds Limit: HGWC-120, HGWC-121A, HGWC-124

Prediction Limit
Interwell Parametric

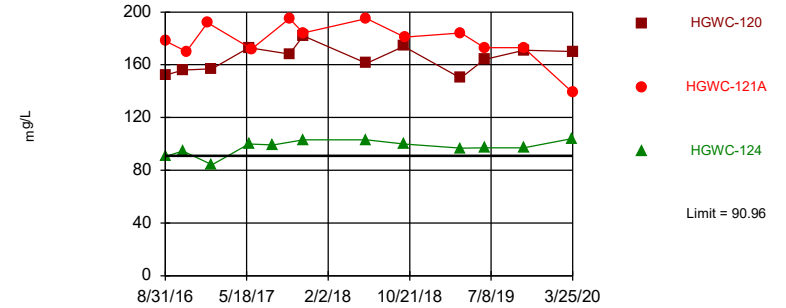


Background Data Summary: Mean=0.2577, Std. Dev.=0.06404, n=12. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.873, critical = 0.805. Kappa = 2.096 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Boron Analysis Run 5/29/2020 2:21 AM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Exceeds Limit: HGWC-120, HGWC-121A, HGWC-124

Prediction Limit
Interwell Parametric

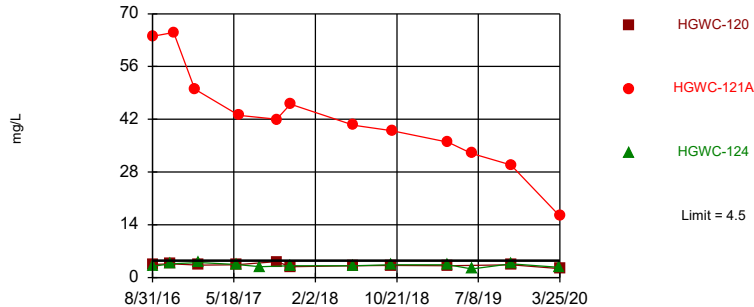


Background Data Summary: Mean=74.75, Std. Dev.=7.733, n=12. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9823, critical = 0.805. Kappa = 2.096 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Calcium Analysis Run 5/29/2020 2:21 AM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Exceeds Limit: HGWC-121A

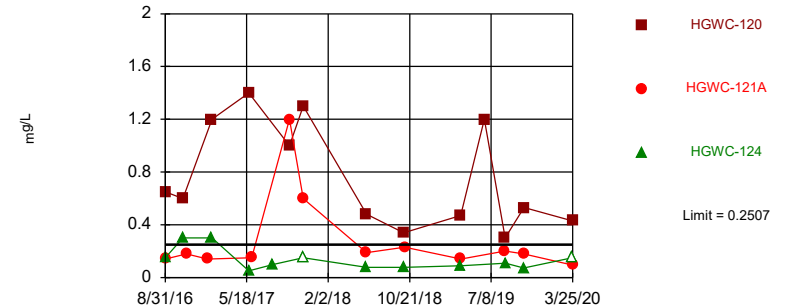
Prediction Limit
Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Annual per-constituent alpha = 0.05832. Individual comparison alpha = 0.009966 (1 of 2). Comparing 3 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Chloride Analysis Run 5/29/2020 2:21 AM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Prediction Limit
Interwell Parametric

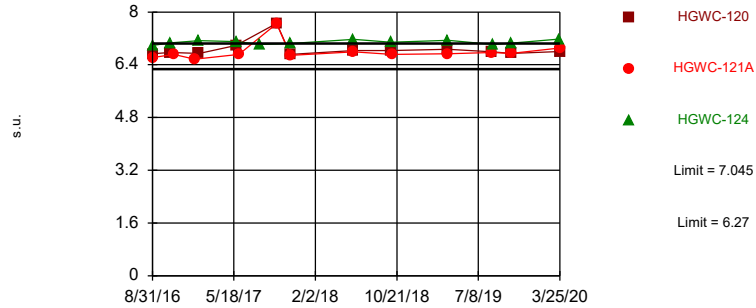


Background Data Summary: Mean=0.1458, Std. Dev.=0.0509, n=13. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9472, critical = 0.814. Kappa = 2.062 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Fluoride Analysis Run 5/29/2020 2:21 AM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Exceeds Limits: HGWC-124

Prediction Limit
Interwell Parametric

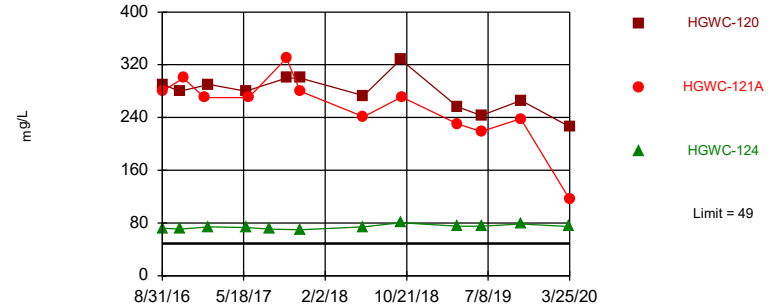


Background Data Summary: Mean=6.658, Std. Dev.=0.1848, n=12. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9147, critical = 0.805. Kappa = 2.096 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001253. Comparing 3 points to limit.

Constituent: pH Analysis Run 5/29/2020 2:21 AM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Exceeds Limit: HGWC-120, HGWC-121A, HGWC-124

Prediction Limit
Interwell Non-parametric

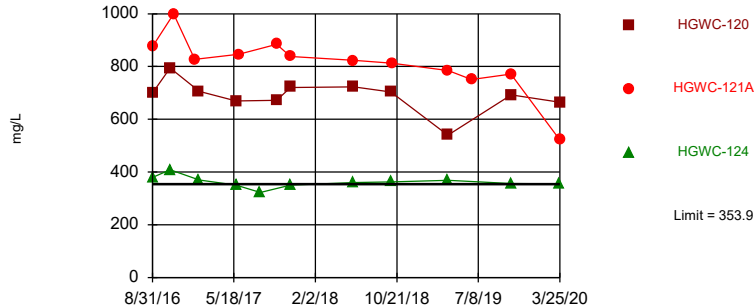


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Annual per-constituent alpha = 0.05832. Individual comparison alpha = 0.009966 (1 of 2). Comparing 3 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Sulfate Analysis Run 5/29/2020 2:21 AM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Exceeds Limit: HGWC-120, HGWC-121A, HGWC-124

Prediction Limit
Interwell Parametric



Background Data Summary: Mean=273.3, Std. Dev.=37.43, n=11. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8195, critical = 0.792. Kappa = 2.155 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Total Dissolved Solids Analysis Run 5/29/2020 2:21 AM
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

FIGURE E.

Trend Test - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 6/26/2020, 4:19 PM

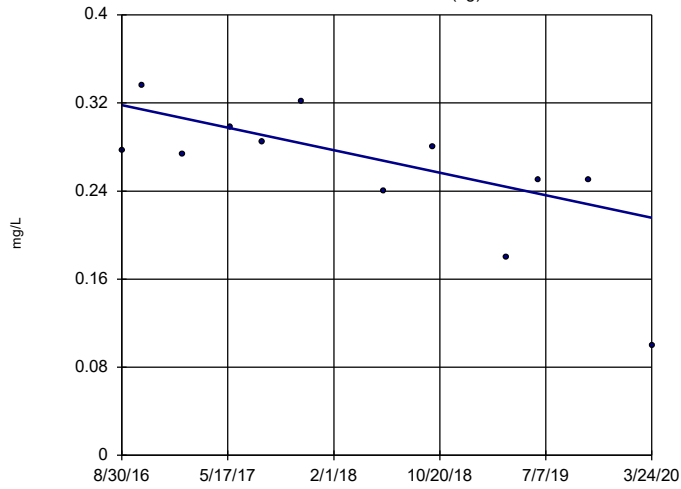
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-121A	-0.2747	-39	-38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-122 ...	0.3079	56	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-121A	-9.809	-60	-38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-121A	-21.98	-40	-38	Yes	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-121A	-46.27	-52	-38	Yes	12	0	n/a	n/a	0.01	NP

Trend Test - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 6/26/2020, 4:19 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWA-122 ...	-0.02867	-33	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-120	-0.05124	-21	-38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-121A	-0.2747	-39	-38	Yes	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-124	-0.01687	-25	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-122 ...	0.3245	2	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-120	4.013	18	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-121A	-4.65	-11	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-124	1.996	22	38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-122 ...	0.3079	56	38	Yes	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-121A	-9.809	-60	-38	Yes	12	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-122 ...	-0.01236	-13	-43	No	13	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-120	-0.1016	-29	-43	No	13	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWA-122 ...	-0.02186	-6	-38	No	12	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWC-124	0.02032	17	38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-122 ...	-1.687	-38	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-120	-13.41	-27	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-121A	-21.98	-40	-38	Yes	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-124	1.246	30	38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-122 ...	-1.936	-3	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-120	-14.48	-17	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-121A	-46.27	-52	-38	Yes	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-124	-4.753	-15	-34	No	11	0	n/a	n/a	0.01	NP

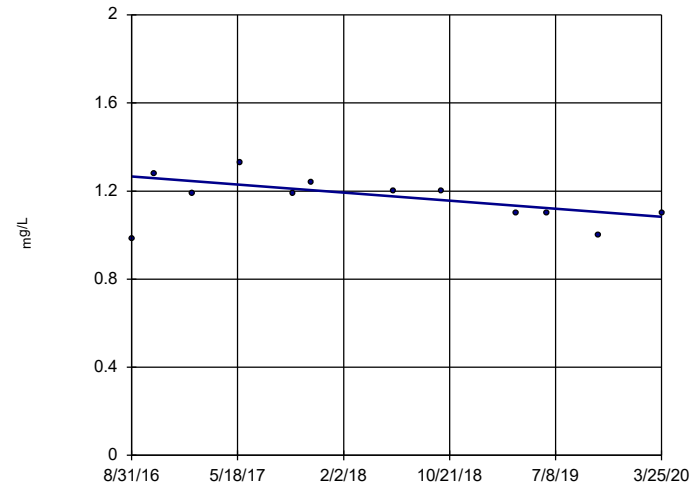
Sen's Slope Estimator HGWA-122 (bg)



n = 12
 Slope = -0.02867
 units per year.
 Mann-Kendall
 statistic = -33
 critical = -38
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 6/26/2020 4:15 PM View: Trend
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

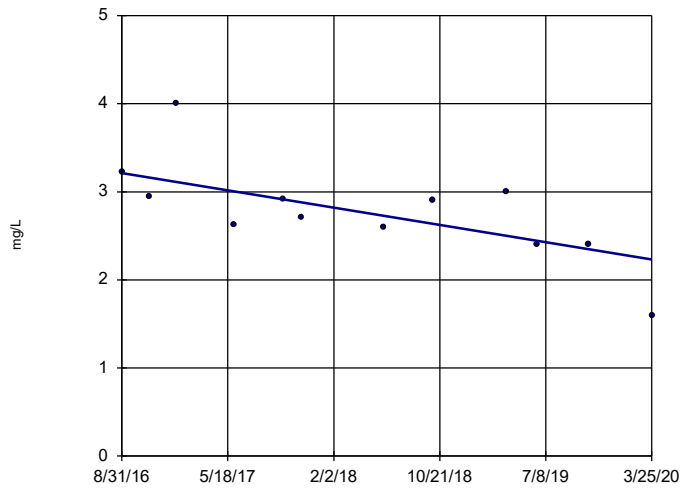
Sen's Slope Estimator HGWC-120



n = 12
 Slope = -0.05124
 units per year.
 Mann-Kendall
 statistic = -21
 critical = -38
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 6/26/2020 4:15 PM View: Trend
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

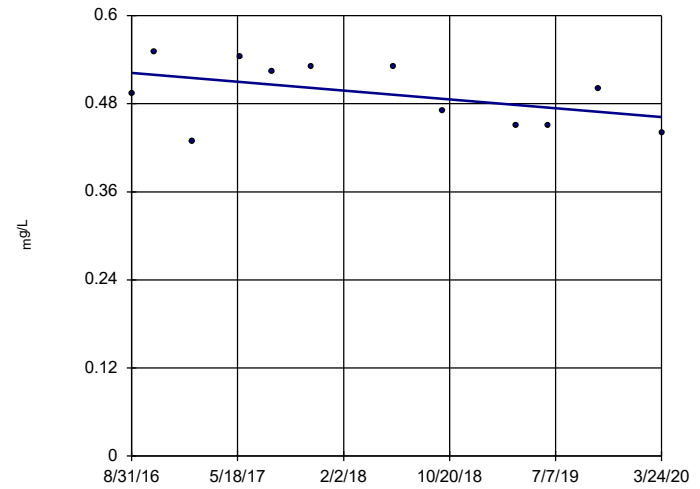
Sen's Slope Estimator HGWC-121A



n = 12
 Slope = -0.2747
 units per year.
 Mann-Kendall
 statistic = -39
 critical = -38
 Decreasing trend
 significant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 6/26/2020 4:15 PM View: Trend
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Sen's Slope Estimator HGWC-124

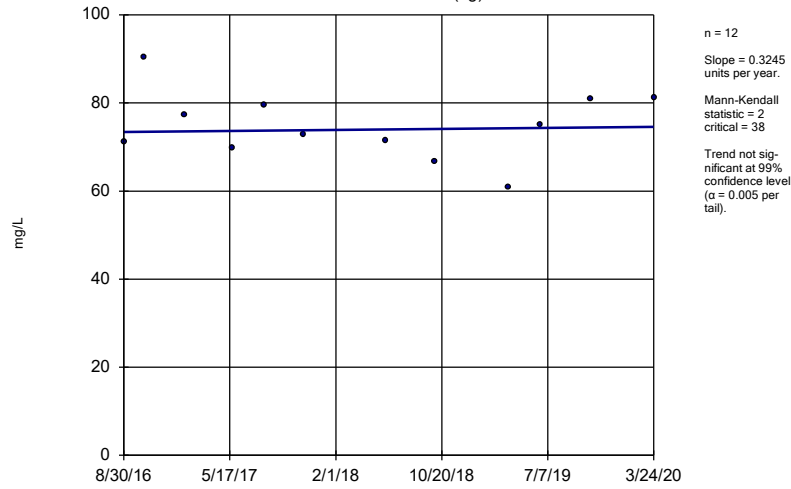


n = 12
 Slope = -0.01687
 units per year.
 Mann-Kendall
 statistic = -25
 critical = -38
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 6/26/2020 4:15 PM View: Trend
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Sen's Slope Estimator

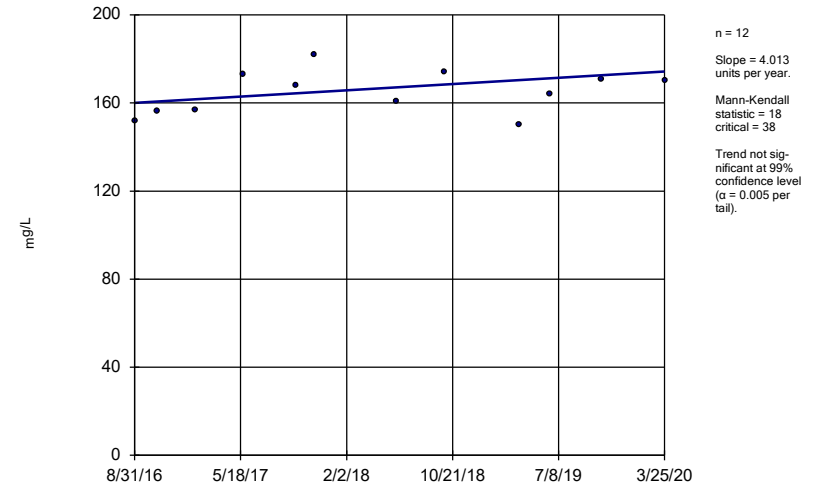
HGWA-122 (bg)



Constituent: Calcium Analysis Run 6/26/2020 4:15 PM View: Trend
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Sen's Slope Estimator

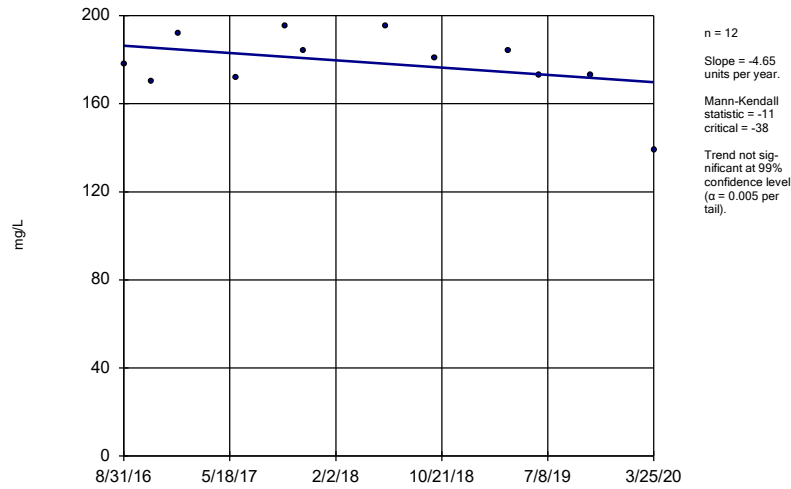
HGWC-120



Constituent: Calcium Analysis Run 6/26/2020 4:15 PM View: Trend
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Sen's Slope Estimator

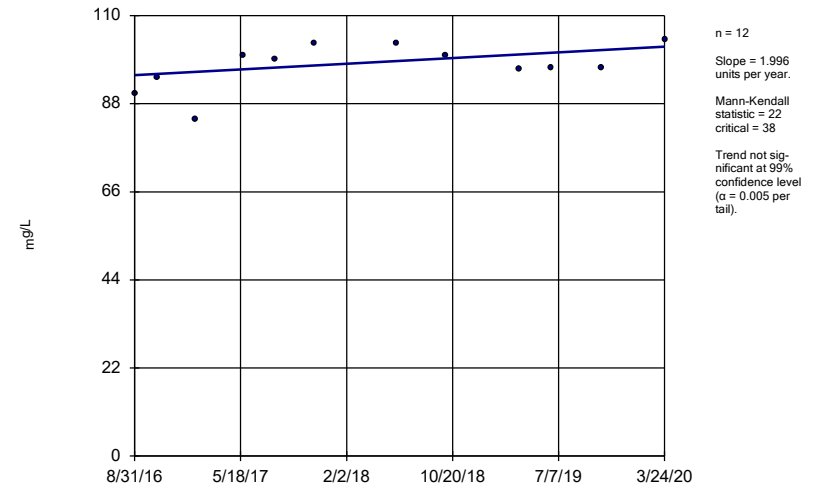
HGWC-121A



Constituent: Calcium Analysis Run 6/26/2020 4:15 PM View: Trend
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Sen's Slope Estimator

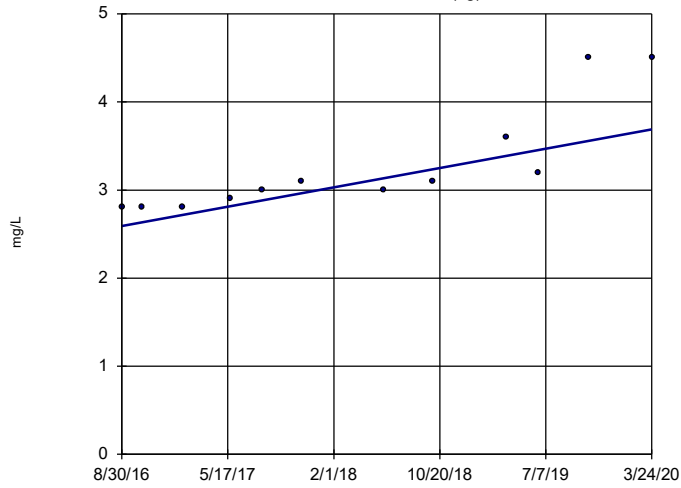
HGWC-124



Constituent: Calcium Analysis Run 6/26/2020 4:15 PM View: Trend
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Sen's Slope Estimator

HGWA-122 (bg)

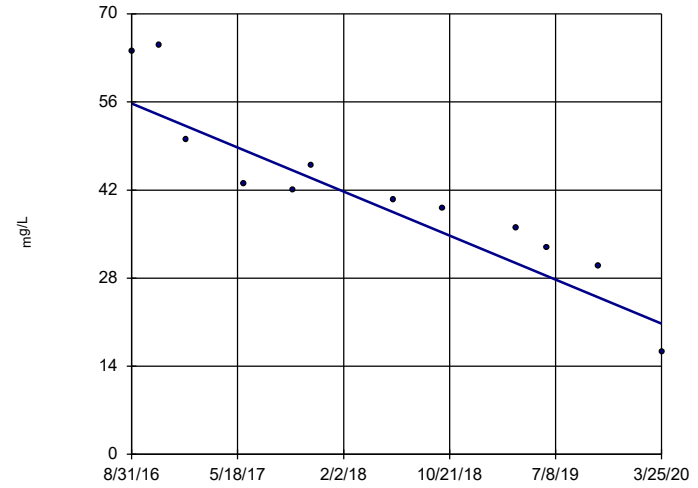


n = 12
 Slope = 0.3079
 units per year.
 Mann-Kendall
 statistic = 56
 critical = 38
 Increasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 6/26/2020 4:15 PM View: Trend
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

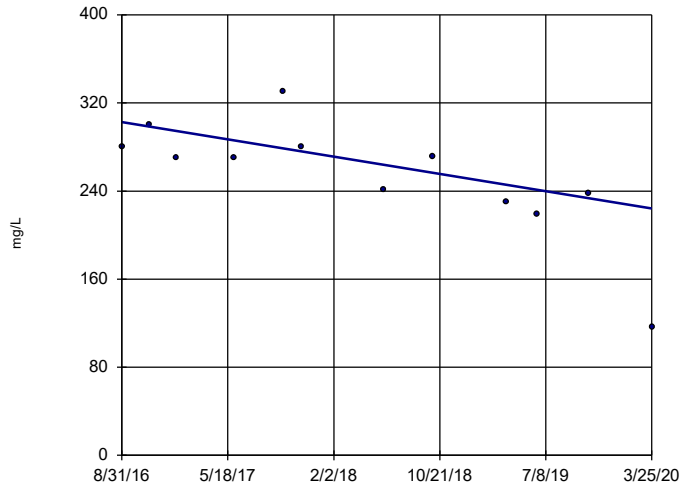
Sen's Slope Estimator

HGWC-121A



Sen's Slope Estimator

HGWC-121A

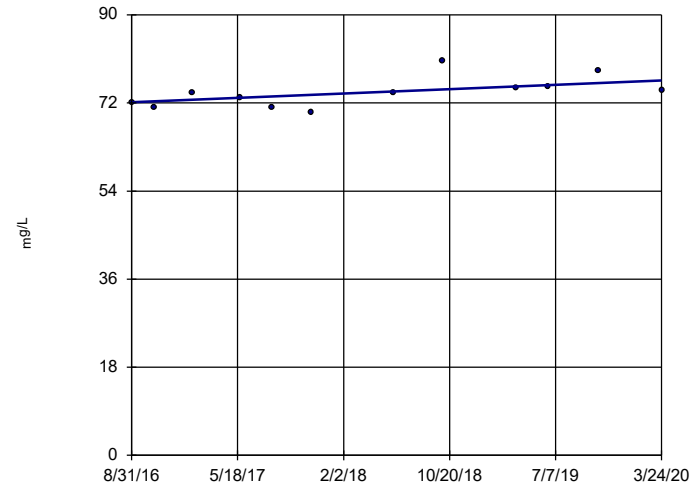


n = 12
 Slope = -21.98 units per year.
 Mann-Kendall statistic = -40
 critical = -38
 Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

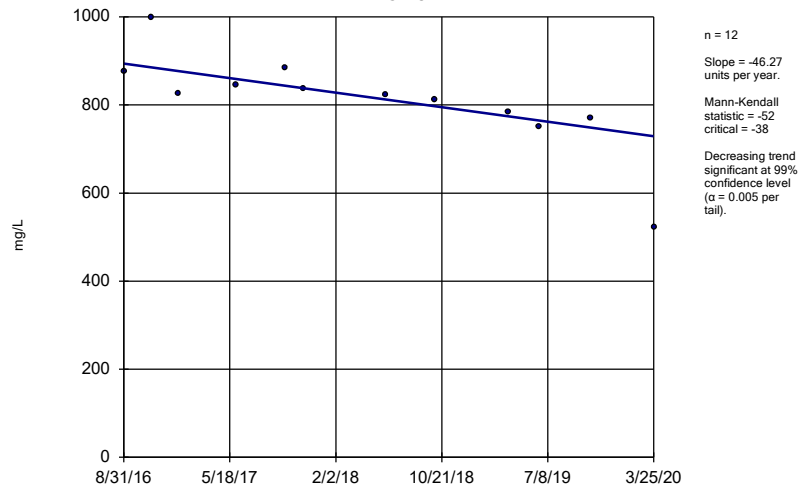
Constituent: Sulfate Analysis Run 6/26/2020 4:15 PM View: Trend
 Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Sen's Slope Estimator

HGWC-124

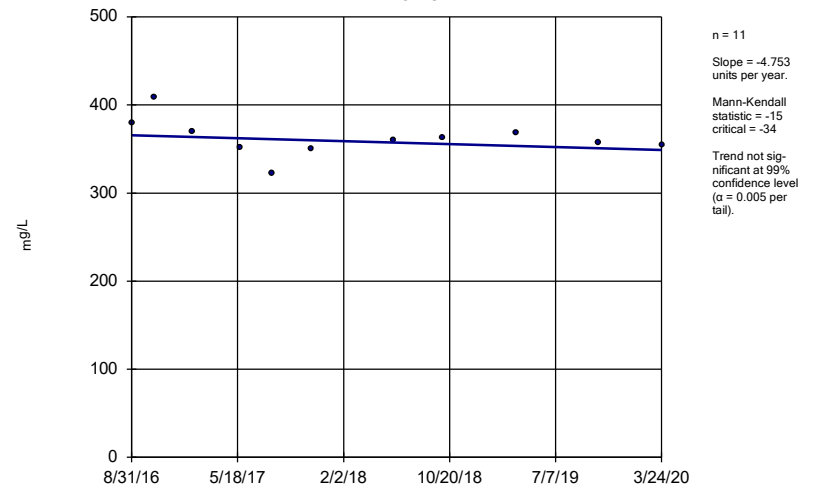


Sen's Slope Estimator HGWC-121A



Constituent: Total Dissolved Solids Analysis Run 6/26/2020 4:15 PM View: Trend
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Sen's Slope Estimator HGWC-124



Constituent: Total Dissolved Solids Analysis Run 6/26/2020 4:15 PM View: Trend
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

FIGURE F.

Upper Tolerance Limits

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 6/26/2020, 4:25 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Bg N	Std. Dev.	%NDs	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Barium (mg/L)	n/a	0.05318	n/a	n/a	n/a	11	0.003907	0	No	0.05	Inter
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	11	n/a	45.45	n/a	0.5688	NP Inter(normal...)
Cobalt (mg/L)	n/a	0.005	n/a	n/a	n/a	11	n/a	100	n/a	0.5688	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.2817	n/a	n/a	n/a	13	0.0509	0	No	0.05	Inter
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	11	n/a	63.64	n/a	0.5688	NP Inter(normal...)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	11	n/a	100	n/a	0.5688	NP Inter(NDs)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	9	n/a	66.67	n/a	0.6302	NP Inter(normal...)
Molybdenum (mg/L)	n/a	0.01007	n/a	n/a	n/a	11	0.002146	9.091	No	0.05	Inter
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	9	n/a	88.89	n/a	0.6302	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	9	n/a	100	n/a	0.6302	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.813	n/a	n/a	n/a	11	0.3643	0	No	0.05	Inter

FIGURE G.

PLANT HAMMOND AP-3 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.05318	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.01	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.005	0.005
Combined Radium, Total (pCi/L)	5		1.813	5
Fluoride, Total (mg/L)	4		0.2817	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.01
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

**MCL = Maximum Contaminant Level*

FIGURE H.

PLANT HAMMOND AP-3 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.05318	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.01	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.005	0.006
Combined Radium, Total (pCi/L)	5		1.813	5
Fluoride, Total (mg/L)	4		0.2817	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

**MCL = Maximum Contaminant Level*

FIGURE I.

Confidence Interval Summary (State) - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-3 Printed 6/29/2020, 10:07 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Molybdenum (mg/L)	HGWC-120	0.03552	0.02208	0.01	Yes	11	0.0288	0.00806	0	None	No	0.01	Param.

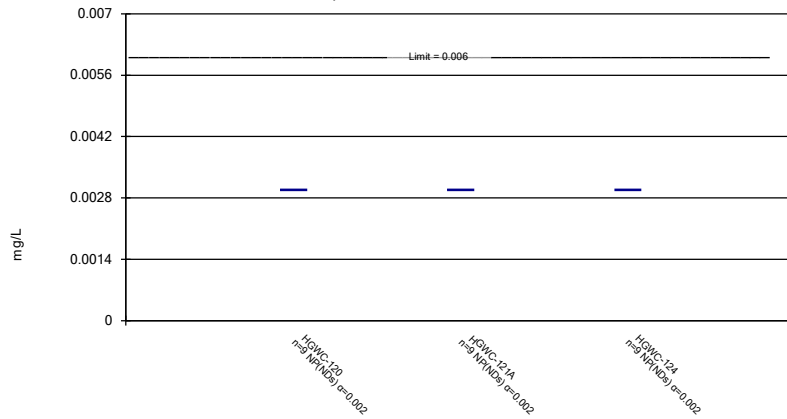
Confidence Interval Summary (State) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-3 Printed 6/29/2020, 10:08 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	HGWC-120	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Antimony (mg/L)	HGWC-121A	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Antimony (mg/L)	HGWC-124	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-120	0.005	0.0007	0.01	No	9	0.003678	0.001991	66.67	None	No	0.002	NP (normality)
Arsenic (mg/L)	HGWC-121A	0.005	0.001	0.01	No	9	0.004156	0.001679	77.78	None	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-124	0.005	0.0006	0.01	No	9	0.004511	0.001467	88.89	None	No	0.002	NP (NDs)
Barium (mg/L)	HGWC-120	0.05302	0.04643	2	No	11	0.04973	0.003956	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-121A	0.08731	0.07187	2	No	11	0.07959	0.009265	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-124	0.07463	0.06706	2	No	11	0.07085	0.004545	0	None	No	0.01	Param.
Beryllium (mg/L)	HGWC-120	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Beryllium (mg/L)	HGWC-121A	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Beryllium (mg/L)	HGWC-124	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-120	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-121A	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-124	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Chromium (mg/L)	HGWC-120	0.01	0.0015	0.1	No	11	0.008384	0.0036	81.82	None	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-121A	0.01	0.01	0.1	No	11	0.009136	0.002864	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-124	0.01	0.00051	0.1	No	11	0.00827	0.003849	81.82	None	No	0.006	NP (NDs)
Cobalt (mg/L)	HGWC-120	0.004063	0.002865	0.005	No	11	0.003464	0.0007187	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-121A	0.005	0.0003	0.005	No	11	0.003736	0.002165	72.73	None	No	0.006	NP (normality)
Cobalt (mg/L)	HGWC-124	0.005	0.005	0.005	No	11	0.005	0	100	None	No	0.006	NP (NDs)
Fluoride (mg/L)	HGWC-120	1.057	0.466	4	No	13	0.7615	0.3975	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-121A	0.6	0.095	4	No	12	0.2871	0.3155	0	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-124	0.1517	0.06232	4	No	12	0.1357	0.08348	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Lead (mg/L)	HGWC-120	0.005	0.00009	0.005	No	11	0.00367	0.002278	72.73	None	No	0.006	NP (normality)
Lead (mg/L)	HGWC-121A	0.005	0.00036	0.005	No	11	0.00413	0.001937	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	HGWC-124	0.005	0.000049	0.005	No	11	0.003207	0.002488	63.64	None	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-120	0.03471	0.0292	0.03	No	11	0.03195	0.003304	0	None	No	0.01	Param.
Lithium (mg/L)	HGWC-121A	0.009593	0.007953	0.03	No	11	0.008773	0.000984	0	None	No	0.01	Param.
Lithium (mg/L)	HGWC-124	0.03	0.0011	0.03	No	11	0.01426	0.01507	45.45	None	No	0.006	NP (normality)
Mercury (mg/L)	HGWC-120	0.0005	0.00004	0.002	No	9	0.0004011	0.0001964	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	HGWC-121A	0.0005	0.0005	0.002	No	9	0.0005	0	100	None	No	0.002	NP (NDs)
Mercury (mg/L)	HGWC-124	0.0005	0.000051	0.002	No	9	0.0004501	0.0001497	88.89	None	No	0.002	NP (NDs)
Molybdenum (mg/L)	HGWC-120	0.03552	0.02208	0.01	Yes	11	0.0288	0.00806	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-121A	0.01	0.01	0.01	No	11	0.01	0	100	None	No	0.006	NP (NDs)
Molybdenum (mg/L)	HGWC-124	0.01	0.001	0.01	No	11	0.005191	0.004606	45.45	None	No	0.006	NP (normality)
Selenium (mg/L)	HGWC-120	0.01	0.002	0.05	No	9	0.009111	0.002667	88.89	None	No	0.002	NP (NDs)
Selenium (mg/L)	HGWC-121A	0.01	0.0011	0.05	No	9	0.009011	0.002967	88.89	None	No	0.002	NP (NDs)
Selenium (mg/L)	HGWC-124	0.01	0.0014	0.05	No	9	0.009044	0.002867	88.89	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-120	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-121A	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-124	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Total Radium (pCi/L)	HGWC-120	1.213	0.6245	5	No	11	0.9187	0.3531	0	None	No	0.01	Param.
Total Radium (pCi/L)	HGWC-121A	1.18	0.4489	5	No	11	0.8145	0.4388	0	None	No	0.01	Param.
Total Radium (pCi/L)	HGWC-124	1.011	0.6543	5	No	11	0.8325	0.2139	0	None	No	0.01	Param.

Non-Parametric Confidence Interval

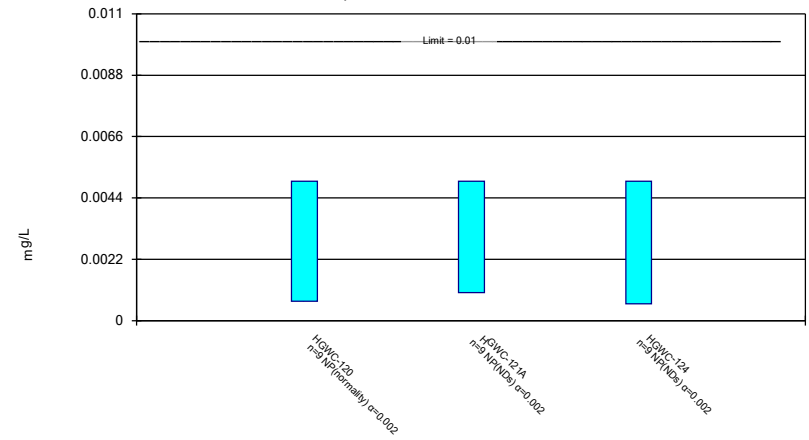
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

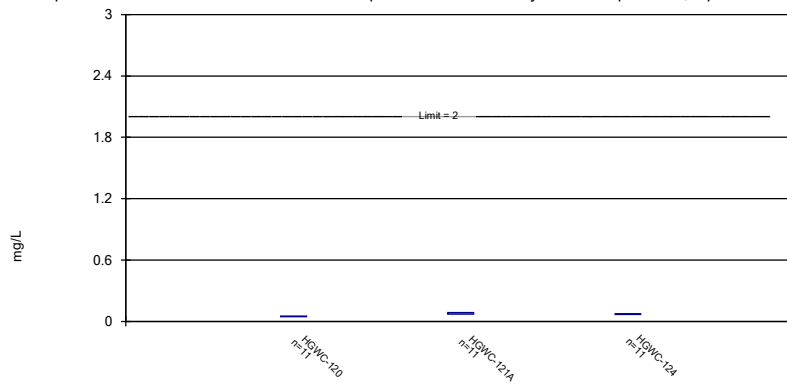
Compliance Limit is not exceeded.



Constituent: Arsenic Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric Confidence Interval

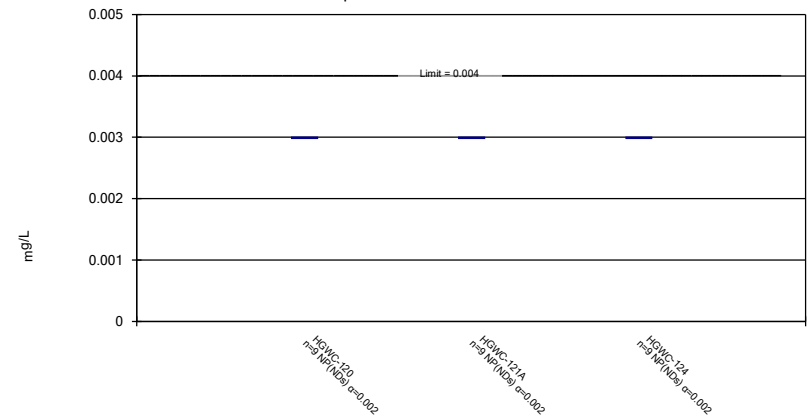
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

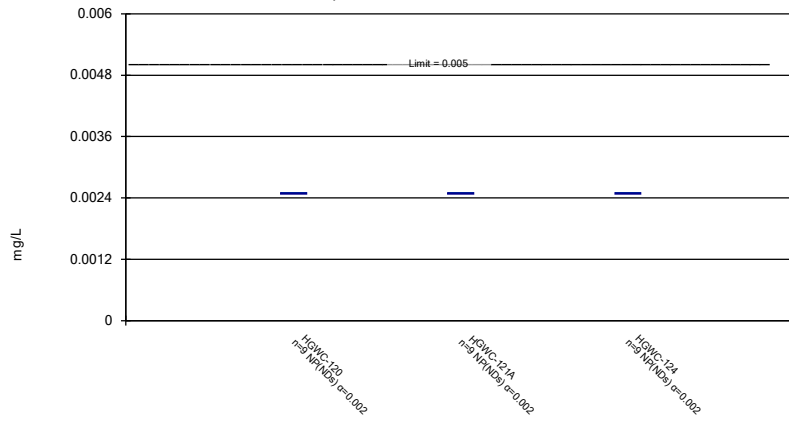
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

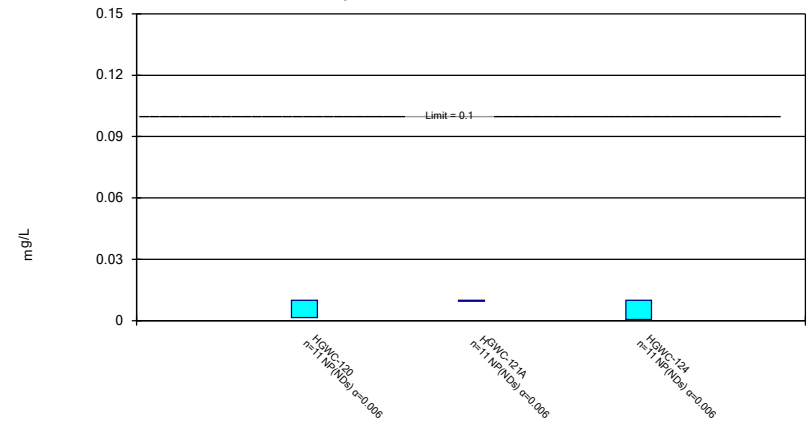
Compliance Limit is not exceeded.



Constituent: Cadmium Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

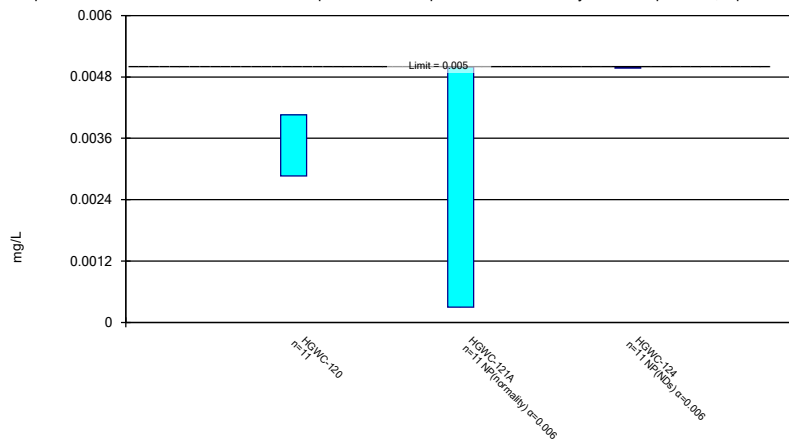
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

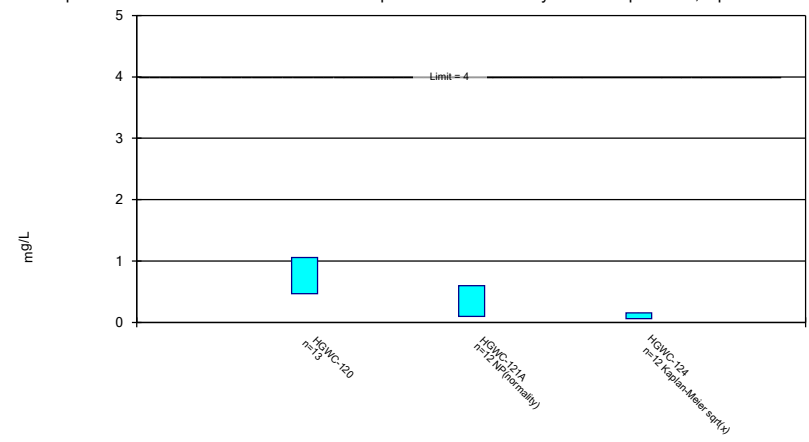
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

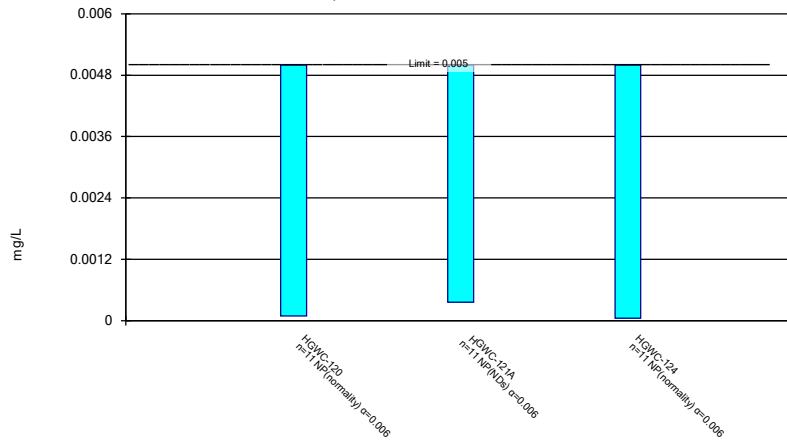
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

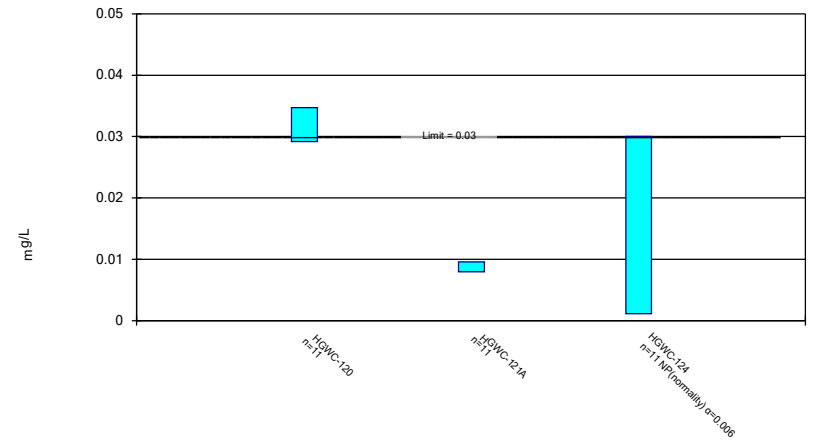
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

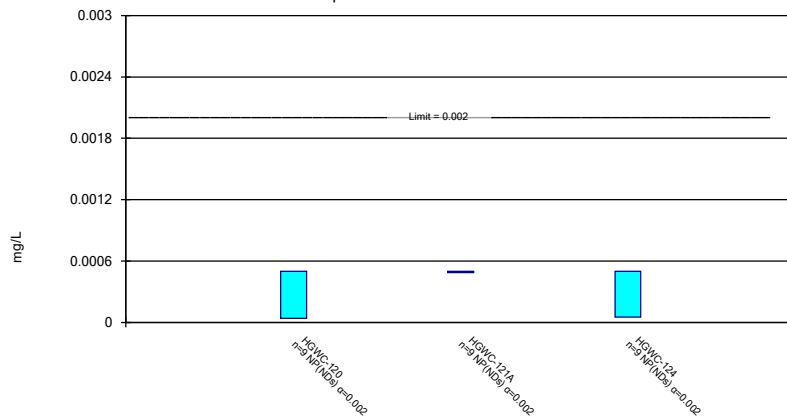
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

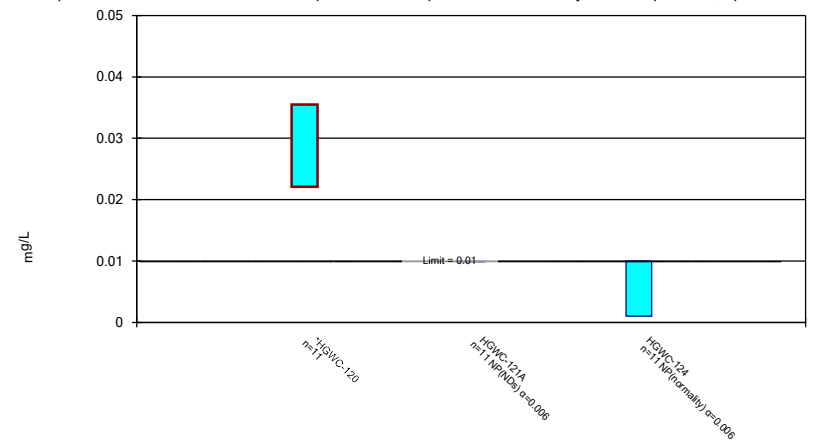
Compliance Limit is not exceeded.



Constituent: Mercury Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

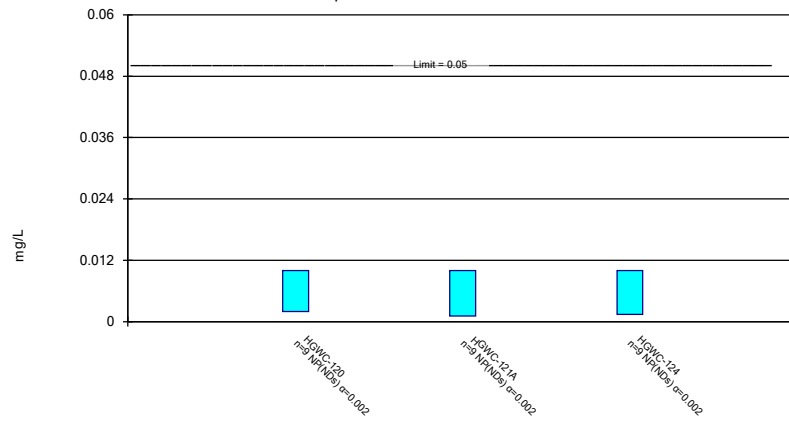
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

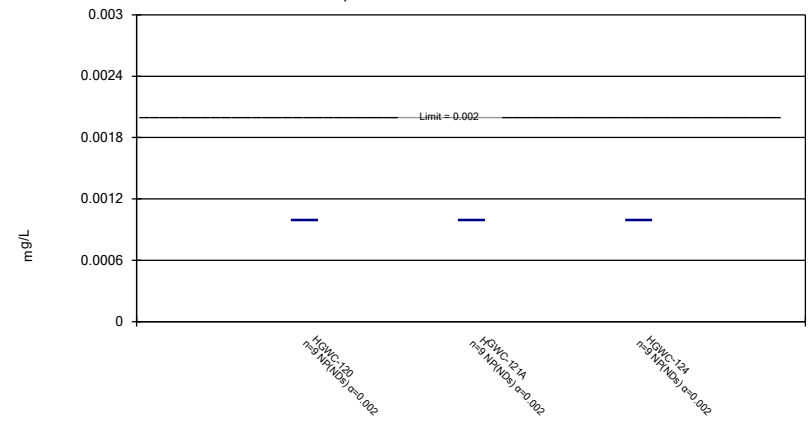
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

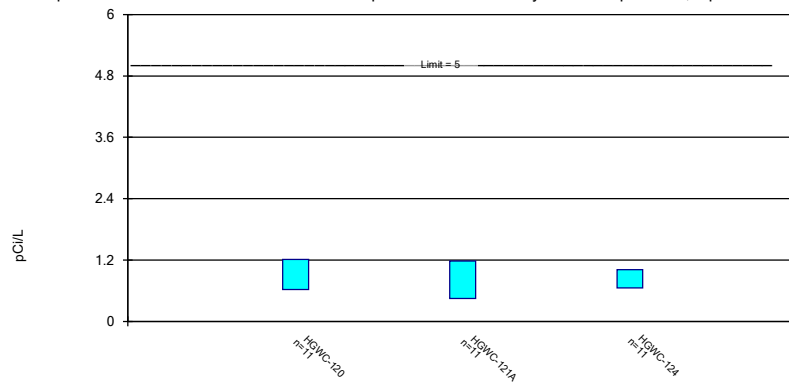
Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Total Radium Analysis Run 6/29/2020 10:05 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-3

FIGURE J.

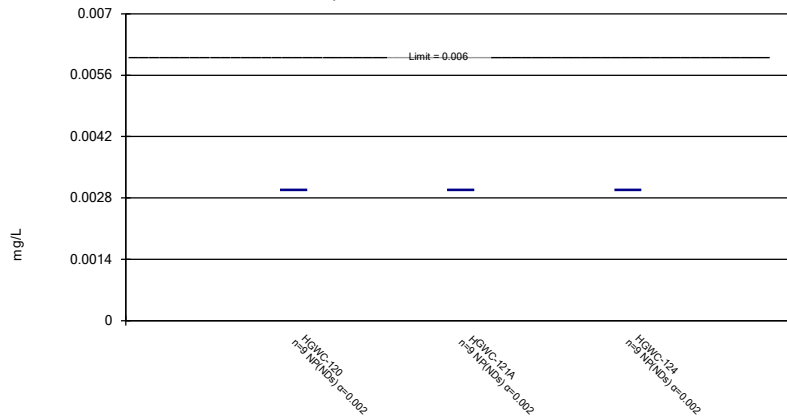
Confidence Interval Summary (Federal) - All Results (No Significant)

Plant Hammond Client: Southern Company Data: Hammond AP-3 Printed 6/29/2020, 10:13 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	HGWC-120	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Antimony (mg/L)	HGWC-121A	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Antimony (mg/L)	HGWC-124	0.003	0.003	0.006	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-120	0.005	0.0007	0.01	No	9	0.003678	0.001991	66.67	None	No	0.002	NP (normality)
Arsenic (mg/L)	HGWC-121A	0.005	0.001	0.01	No	9	0.004156	0.001679	77.78	None	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-124	0.005	0.0006	0.01	No	9	0.004511	0.001467	88.89	None	No	0.002	NP (NDs)
Barium (mg/L)	HGWC-120	0.05302	0.04643	2	No	11	0.04973	0.003956	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-121A	0.08731	0.07187	2	No	11	0.07959	0.009265	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-124	0.07463	0.06706	2	No	11	0.07085	0.004545	0	None	No	0.01	Param.
Beryllium (mg/L)	HGWC-120	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Beryllium (mg/L)	HGWC-121A	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Beryllium (mg/L)	HGWC-124	0.003	0.003	0.004	No	9	0.003	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-120	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-121A	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Cadmium (mg/L)	HGWC-124	0.0025	0.0025	0.005	No	9	0.0025	0	100	None	No	0.002	NP (NDs)
Chromium (mg/L)	HGWC-120	0.01	0.0015	0.1	No	11	0.008384	0.0036	81.82	None	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-121A	0.01	0.01	0.1	No	11	0.009136	0.002864	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-124	0.01	0.00051	0.1	No	11	0.00827	0.003849	81.82	None	No	0.006	NP (NDs)
Cobalt (mg/L)	HGWC-120	0.004063	0.002865	0.006	No	11	0.003464	0.0007187	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-121A	0.005	0.0003	0.006	No	11	0.003736	0.002165	72.73	None	No	0.006	NP (normality)
Cobalt (mg/L)	HGWC-124	0.005	0.005	0.006	No	11	0.005	0	100	None	No	0.006	NP (NDs)
Fluoride (mg/L)	HGWC-120	1.057	0.466	4	No	13	0.7615	0.3975	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-121A	0.6	0.095	4	No	12	0.2871	0.3155	0	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-124	0.1517	0.06232	4	No	12	0.1357	0.08348	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Lead (mg/L)	HGWC-120	0.005	0.00009	0.015	No	11	0.00367	0.002278	72.73	None	No	0.006	NP (normality)
Lead (mg/L)	HGWC-121A	0.005	0.00036	0.015	No	11	0.00413	0.001937	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	HGWC-124	0.005	0.000049	0.015	No	11	0.003207	0.002488	63.64	None	No	0.006	NP (normality)
Lithium (mg/L)	HGWC-120	0.03471	0.0292	0.04	No	11	0.03195	0.003304	0	None	No	0.01	Param.
Lithium (mg/L)	HGWC-121A	0.009593	0.007953	0.04	No	11	0.008773	0.000984	0	None	No	0.01	Param.
Lithium (mg/L)	HGWC-124	0.03	0.0011	0.04	No	11	0.01426	0.01507	45.45	None	No	0.006	NP (normality)
Mercury (mg/L)	HGWC-120	0.0005	0.00004	0.002	No	9	0.0004011	0.0001964	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	HGWC-121A	0.0005	0.0005	0.002	No	9	0.0005	0	100	None	No	0.002	NP (NDs)
Mercury (mg/L)	HGWC-124	0.0005	0.000051	0.002	No	9	0.0004501	0.0001497	88.89	None	No	0.002	NP (NDs)
Molybdenum (mg/L)	HGWC-120	0.03552	0.02208	0.1	No	11	0.0288	0.00806	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-121A	0.01	0.01	0.1	No	11	0.01	0	100	None	No	0.006	NP (NDs)
Molybdenum (mg/L)	HGWC-124	0.01	0.001	0.1	No	11	0.005191	0.004606	45.45	None	No	0.006	NP (normality)
Selenium (mg/L)	HGWC-120	0.01	0.002	0.05	No	9	0.009111	0.002667	88.89	None	No	0.002	NP (NDs)
Selenium (mg/L)	HGWC-121A	0.01	0.0011	0.05	No	9	0.009011	0.002967	88.89	None	No	0.002	NP (NDs)
Selenium (mg/L)	HGWC-124	0.01	0.0014	0.05	No	9	0.009044	0.002867	88.89	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-120	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-121A	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Thallium (mg/L)	HGWC-124	0.001	0.001	0.002	No	9	0.001	0	100	None	No	0.002	NP (NDs)
Total Radium (pCi/L)	HGWC-120	1.213	0.6245	5	No	11	0.9187	0.3531	0	None	No	0.01	Param.
Total Radium (pCi/L)	HGWC-121A	1.18	0.4489	5	No	11	0.8145	0.4388	0	None	No	0.01	Param.
Total Radium (pCi/L)	HGWC-124	1.011	0.6543	5	No	11	0.8325	0.2139	0	None	No	0.01	Param.

Non-Parametric Confidence Interval

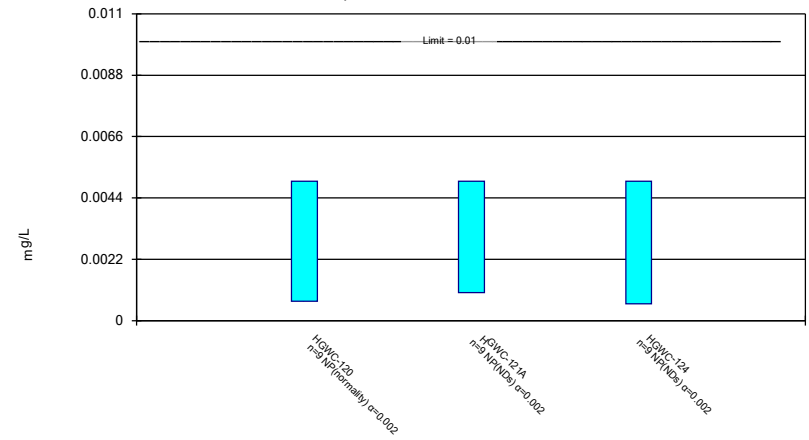
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

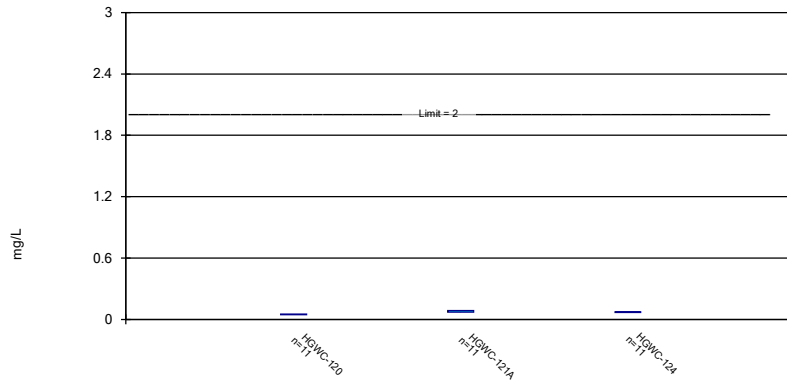
Compliance Limit is not exceeded.



Constituent: Arsenic Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric Confidence Interval

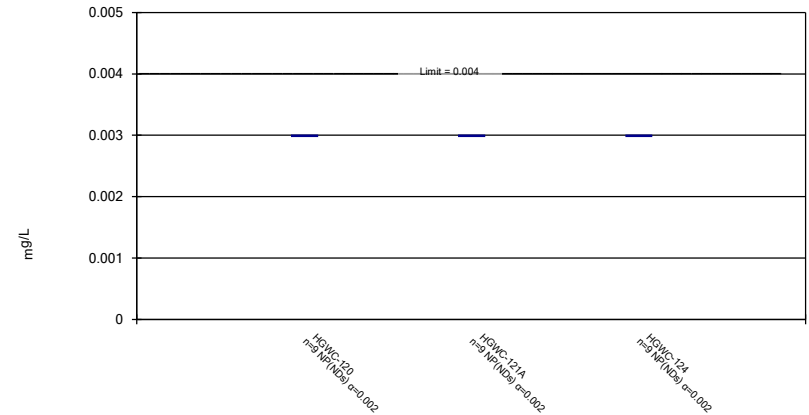
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

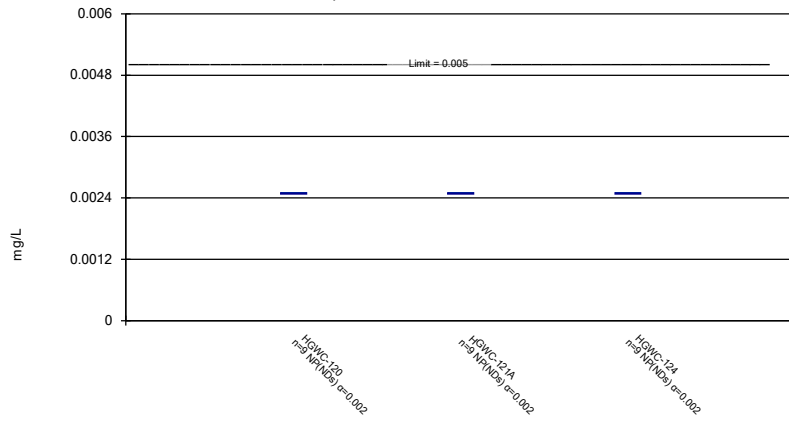
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

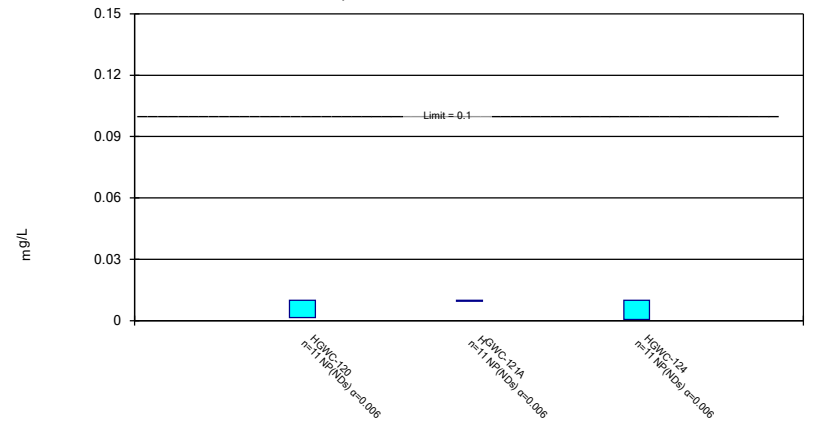
Compliance Limit is not exceeded.



Constituent: Cadmium Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

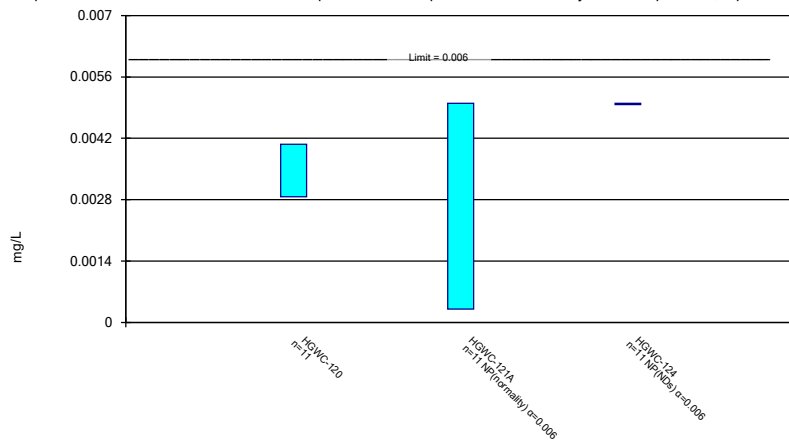
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

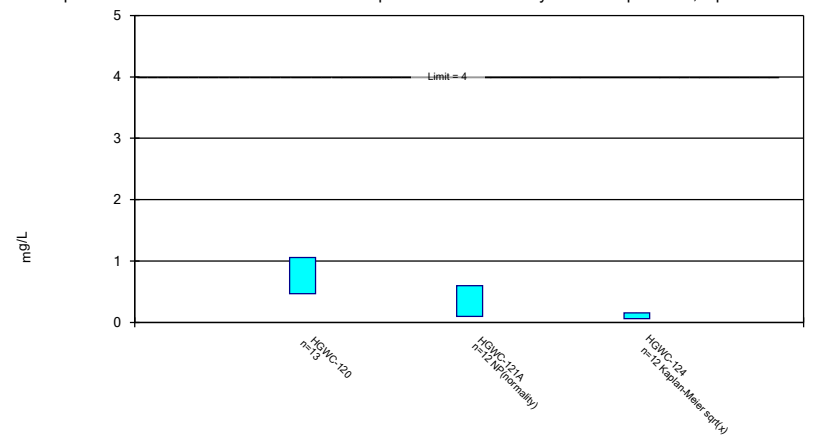
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

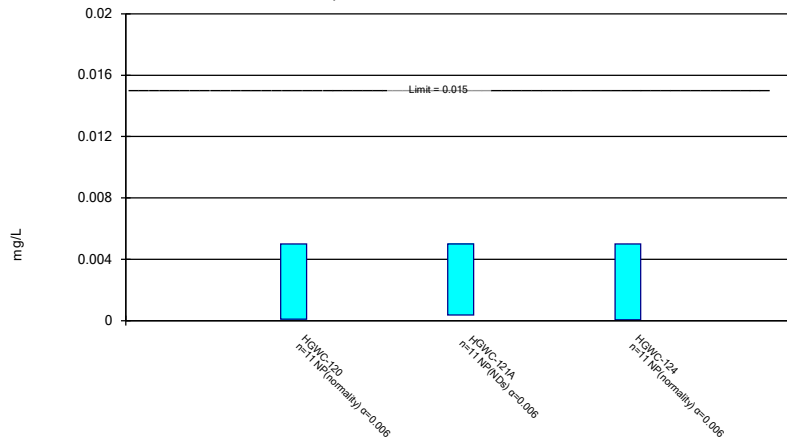
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

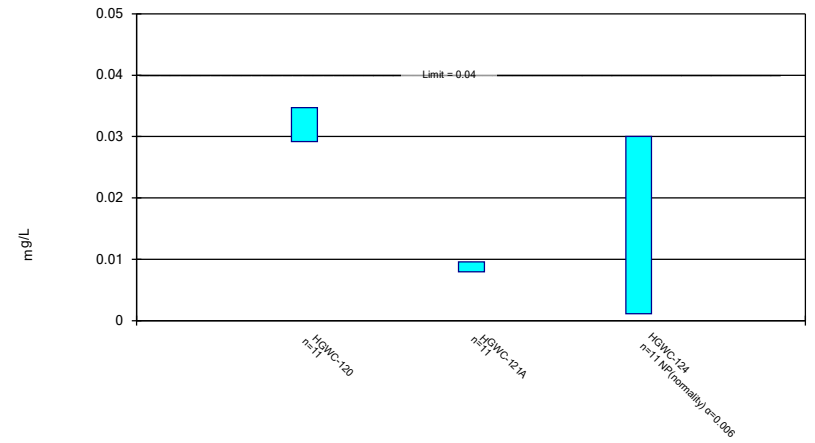
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

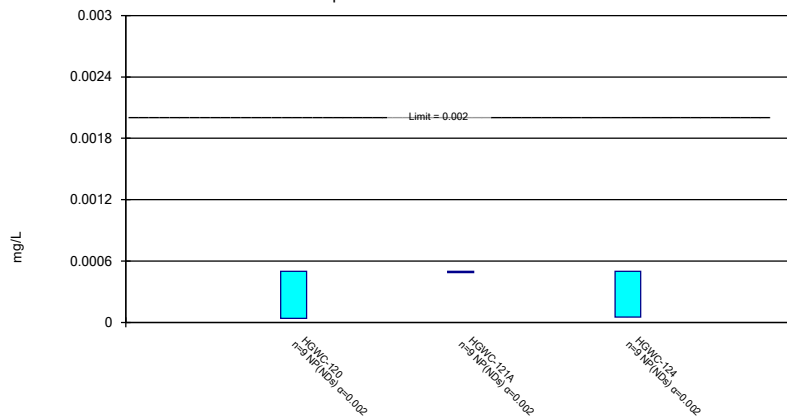
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

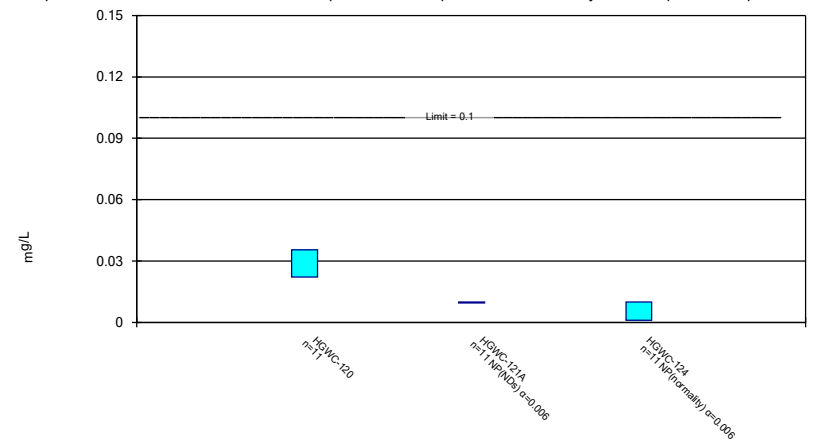
Compliance Limit is not exceeded.



Constituent: Mercury Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric and Non-Parametric (NP) Confidence Interval

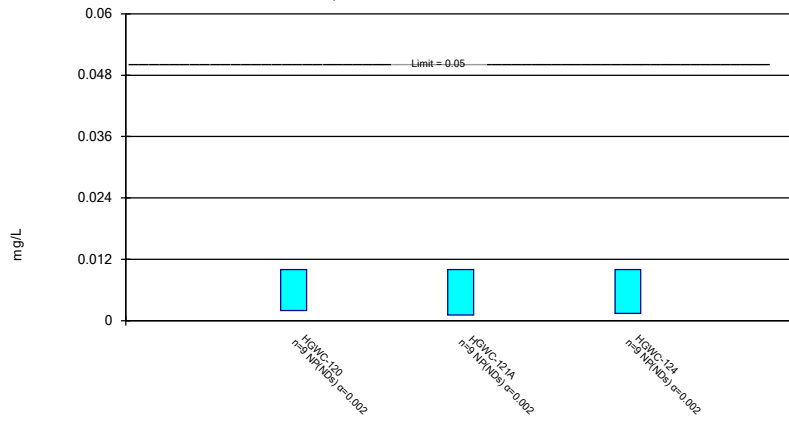
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

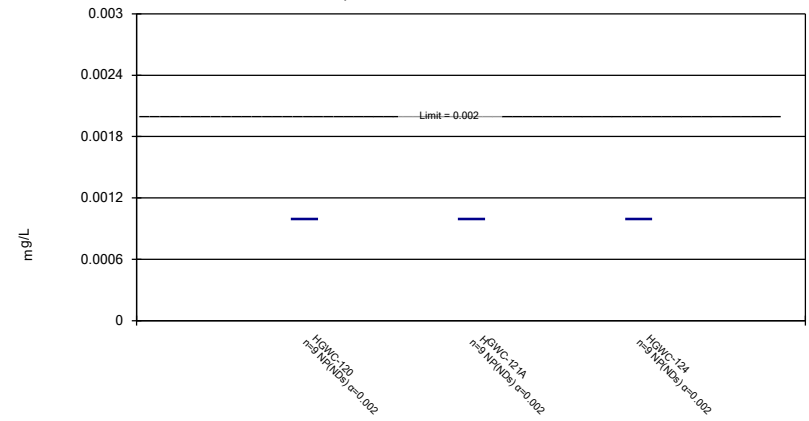
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Non-Parametric Confidence Interval

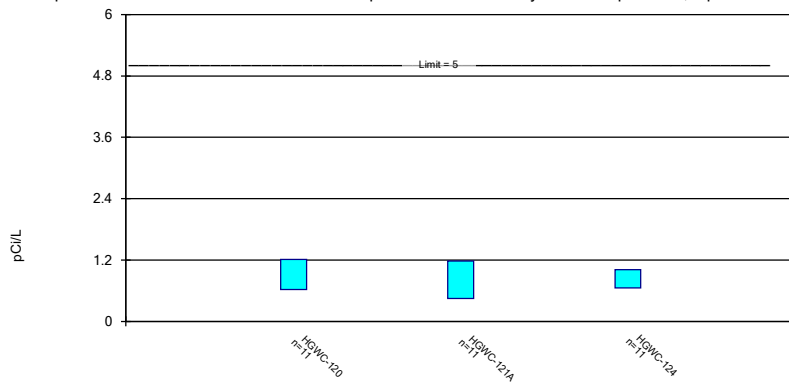
Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

Parametric Confidence Interval

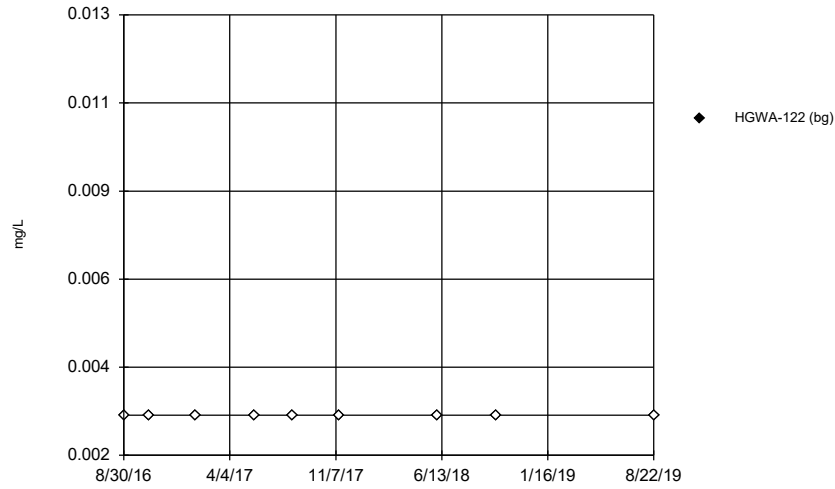
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Total Radium Analysis Run 6/29/2020 10:10 AM View: Confidence Intervals - Federal
Plant Hammond Client: Southern Company Data: Hammond AP-3

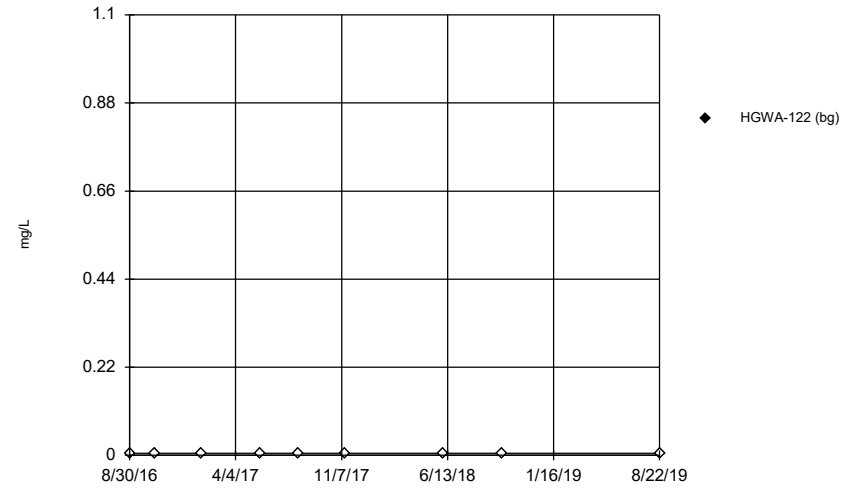
FIGURE A.

Time Series



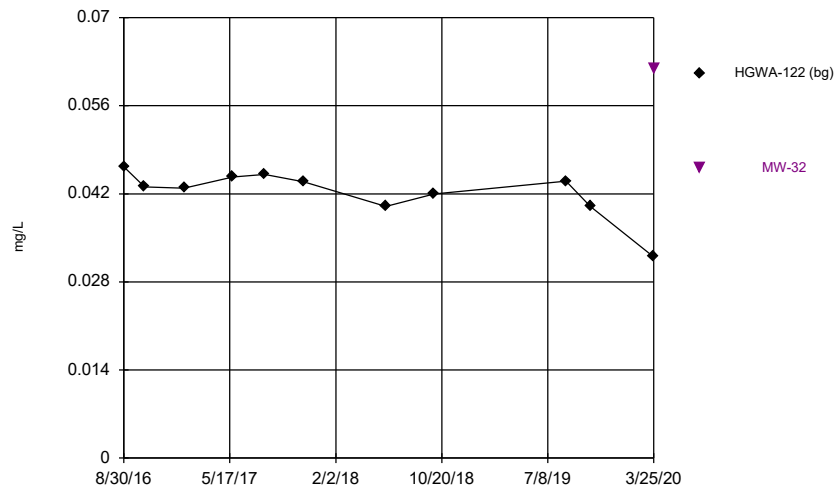
Constituent: Antimony Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



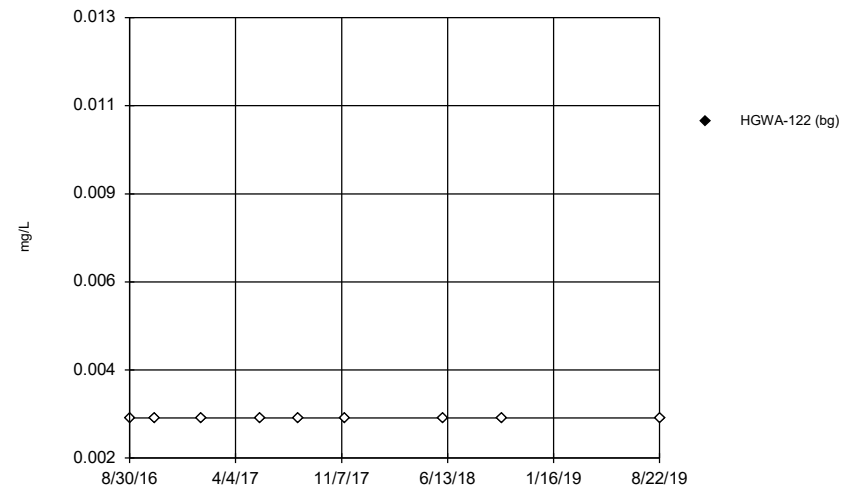
Constituent: Arsenic Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



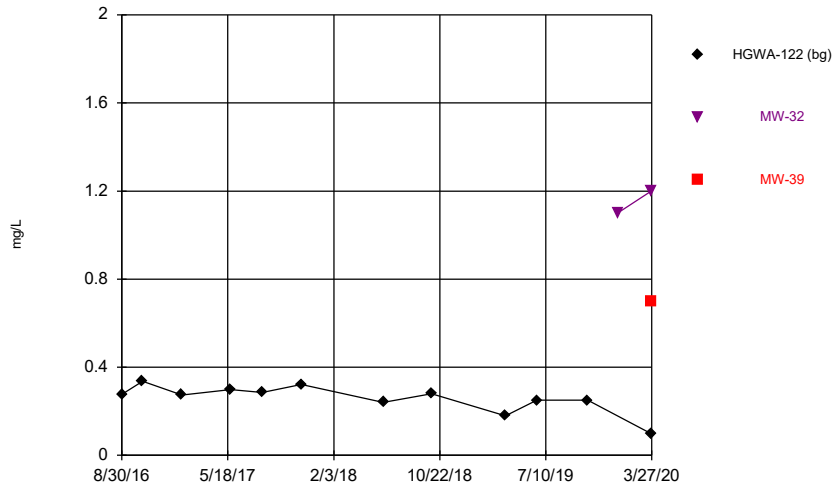
Constituent: Barium Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



Constituent: Beryllium Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

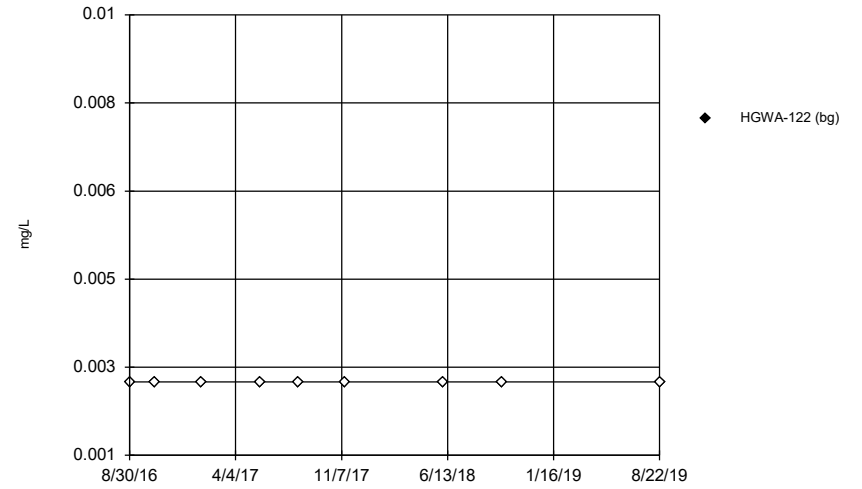
Time Series



Constituent: Boron Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

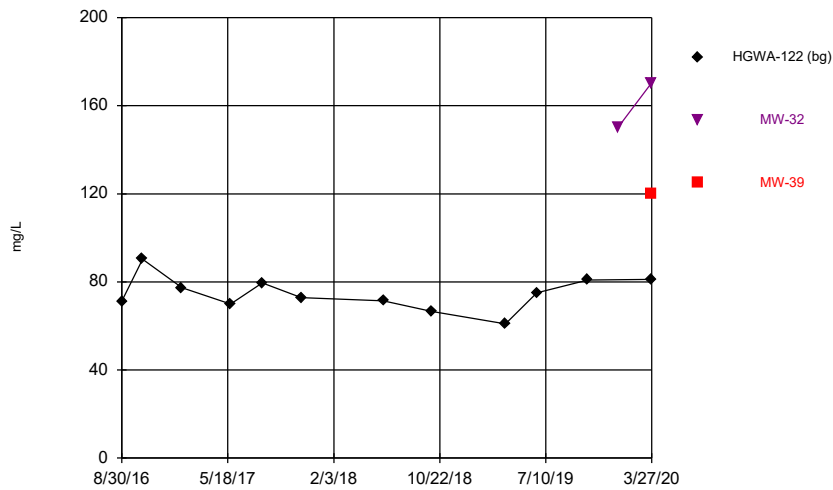
Hollow symbols indicate censored values.

Time Series



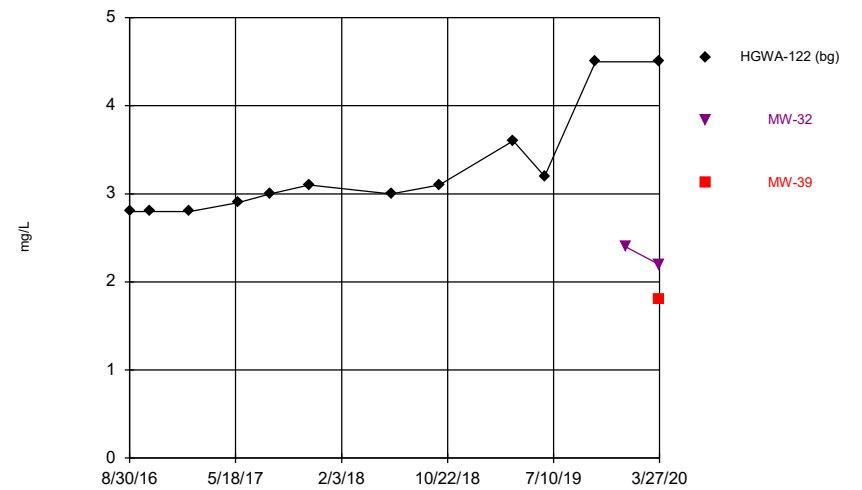
Constituent: Cadmium Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



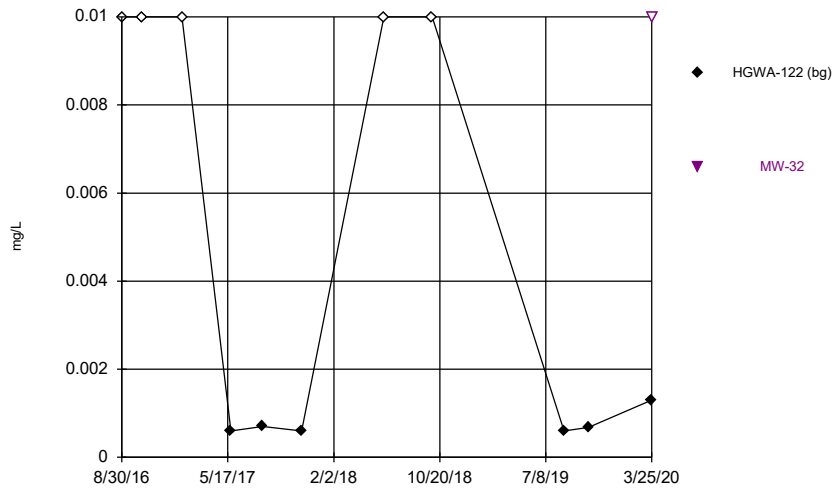
Constituent: Calcium Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



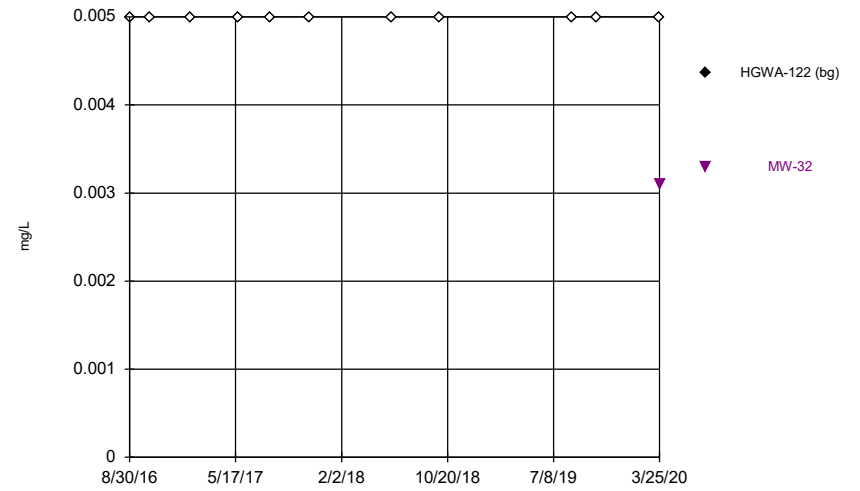
Constituent: Chloride Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



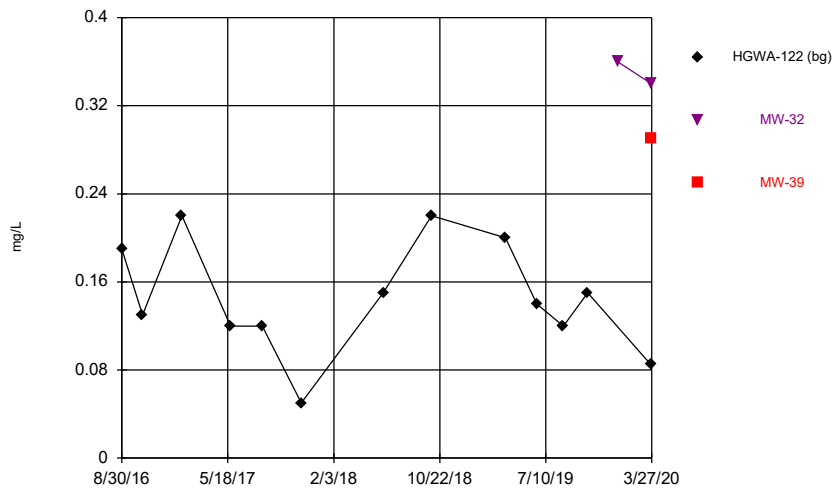
Constituent: Chromium Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



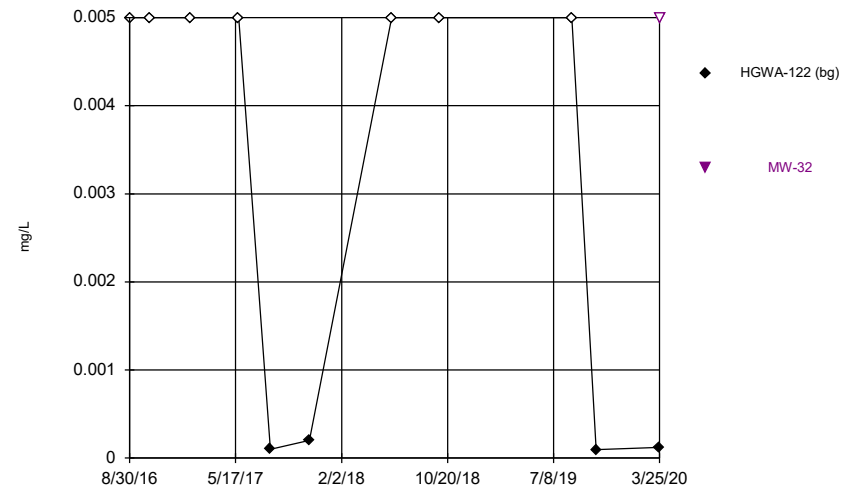
Constituent: Cobalt Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



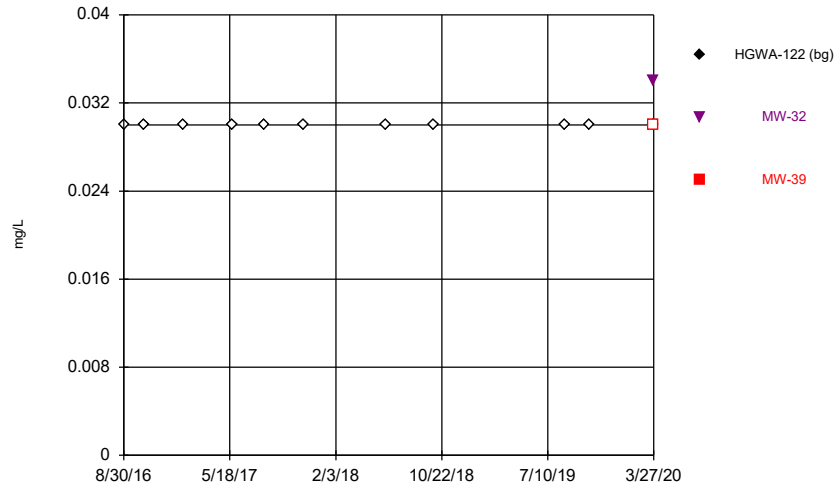
Constituent: Fluoride Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



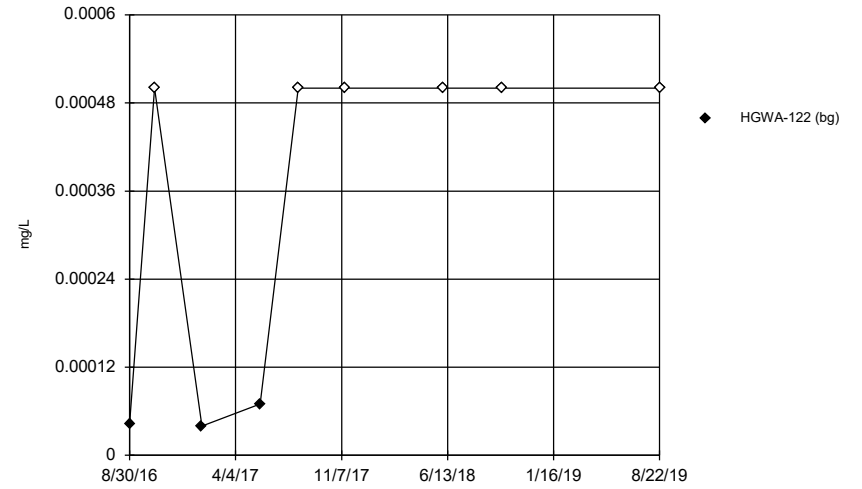
Constituent: Lead Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



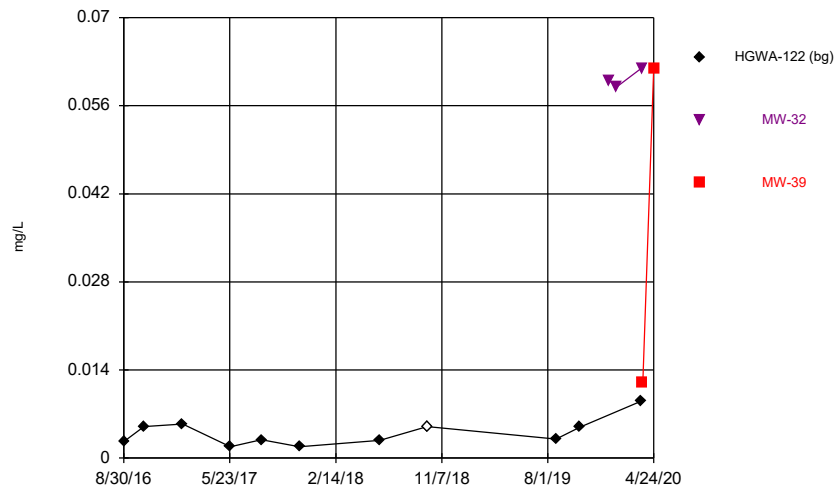
Constituent: Lithium Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



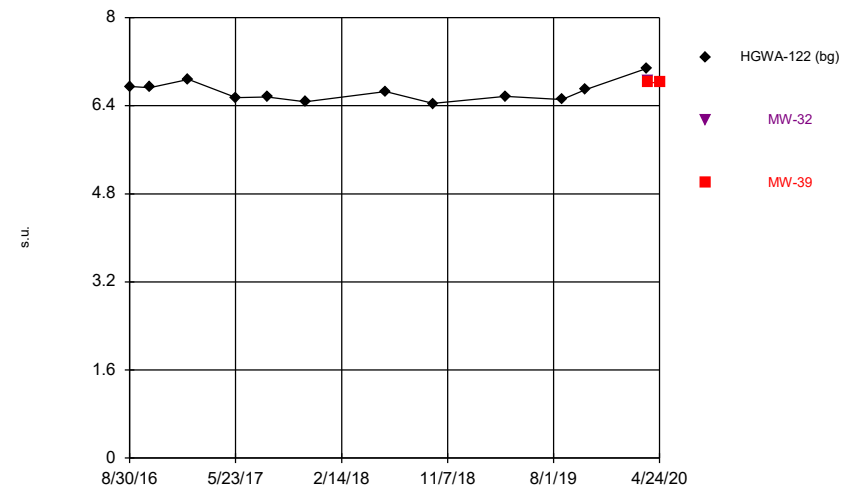
Constituent: Mercury Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



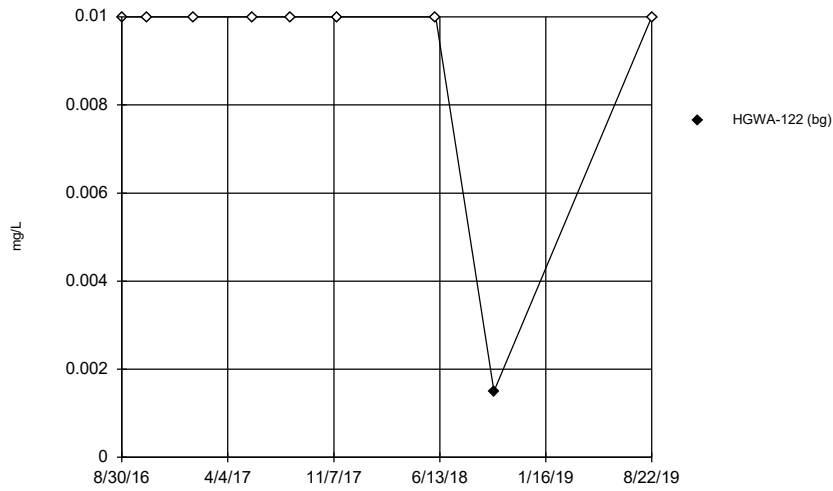
Constituent: Molybdenum Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



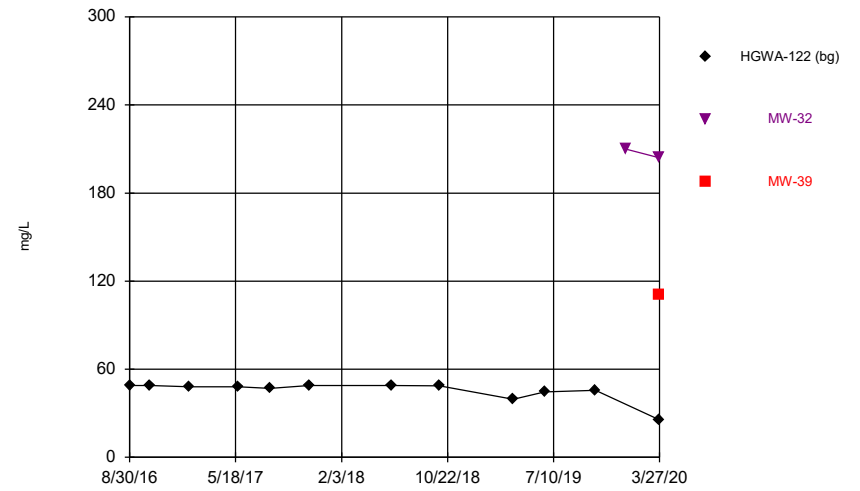
Constituent: pH Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



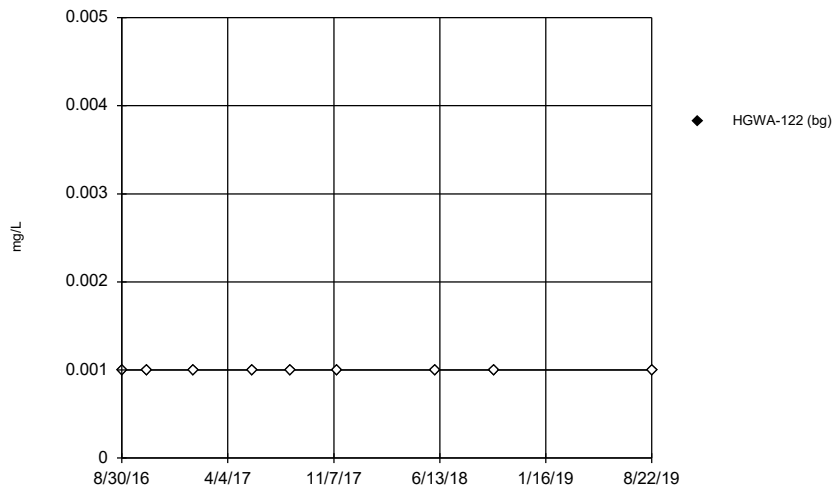
Constituent: Selenium Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



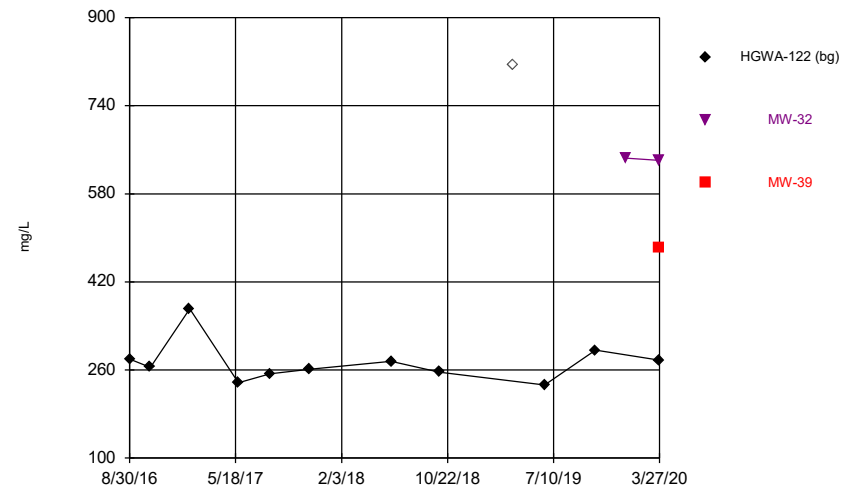
Constituent: Sulfate Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



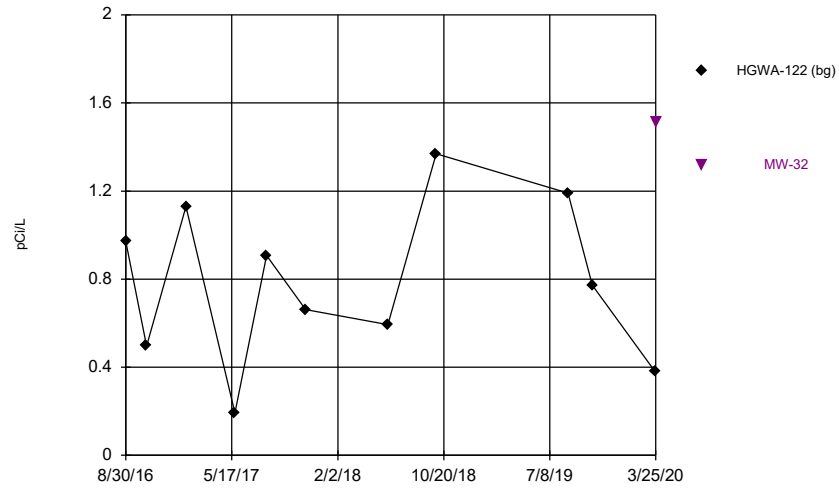
Constituent: Thallium Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



Constituent: Total Dissolved Solids Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series



Constituent: Total Radium Analysis Run 6/29/2020 12:02 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

Time Series

Constituent: Antimony (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)
8/30/2016	<0.003
10/20/2016	<0.003
1/25/2017	<0.003
5/25/2017	<0.003
8/11/2017	<0.003
11/15/2017	<0.003
6/5/2018	<0.003
10/2/2018	<0.003
8/22/2019	<0.003

Time Series

Constituent: Arsenic (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

HGWA-122 (bg)

8/30/2016	<0.005
10/20/2016	<0.005
1/25/2017	<0.005
5/25/2017	<0.005
8/11/2017	<0.005
11/15/2017	<0.005
6/5/2018	<0.005
10/2/2018	<0.005
8/22/2019	<0.005

Time Series

Constituent: Barium (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32
8/30/2016	0.0463	
10/20/2016	0.0431	
1/25/2017	0.0429	
5/25/2017	0.0447	
8/11/2017	0.0451	
11/15/2017	0.0439	
6/5/2018	0.04	
10/2/2018	0.042	
8/22/2019	0.044	
10/21/2019	0.04	
3/24/2020	0.032	
3/25/2020		0.062

Time Series

Constituent: Beryllium (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)
8/30/2016	<0.003
10/20/2016	<0.003
1/25/2017	<0.003
5/25/2017	<0.003
8/11/2017	<0.003
11/15/2017	<0.003
6/5/2018	<0.003
10/2/2018	<0.003
8/22/2019	<0.003

Time Series

Constituent: Boron (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	0.277		
10/20/2016	0.336		
1/25/2017	0.274		
5/25/2017	0.298		
8/11/2017	0.285		
11/15/2017	0.322		
6/5/2018	0.24		
10/2/2018	0.28		
4/2/2019	0.18		
6/18/2019	0.25		
10/21/2019	0.25		
1/3/2020		1.1	
3/24/2020	0.1		
3/25/2020		1.2	
3/27/2020			0.7

Time Series

Constituent: Cadmium (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

HGWA-122 (bg)

8/30/2016	<0.0025
10/20/2016	<0.0025
1/25/2017	<0.0025
5/25/2017	<0.0025
8/11/2017	<0.0025
11/15/2017	<0.0025
6/5/2018	<0.0025
10/2/2018	<0.0025
8/22/2019	<0.0025

Time Series

Constituent: Calcium (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	71.3		
10/20/2016	90.3		
1/25/2017	77.3		
5/25/2017	69.9		
8/11/2017	79.5		
11/15/2017	72.8		
6/5/2018	71.4		
10/2/2018	66.6		
4/2/2019	60.9		
6/18/2019	75		
10/21/2019	80.8		
1/3/2020		150	
3/24/2020	81.2		
3/25/2020		170	
3/27/2020			120

Time Series

Constituent: Chloride (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	2.8		
10/20/2016	2.8		
1/25/2017	2.8		
5/25/2017	2.9		
8/11/2017	3		
11/15/2017	3.1		
6/5/2018	3		
10/2/2018	3.1		
4/2/2019	3.6		
6/18/2019	3.2		
10/21/2019	4.5		
1/3/2020		2.4	
3/24/2020	4.5		
3/25/2020		2.2	
3/27/2020			1.8

Time Series

Constituent: Chromium (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32
8/30/2016	<0.01	
10/20/2016	<0.01	
1/25/2017	<0.01	
5/25/2017	0.0006 (J)	
8/11/2017	0.0007 (J)	
11/15/2017	0.0006 (J)	
6/5/2018	<0.01	
10/2/2018	<0.01	
8/22/2019	0.0006 (J)	
10/21/2019	0.00068 (J)	
3/24/2020	0.0013 (J)	
3/25/2020		<0.01

Time Series

Constituent: Cobalt (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32
8/30/2016	<0.005	
10/20/2016	<0.005	
1/25/2017	<0.005	
5/25/2017	<0.005	
8/11/2017	<0.005	
11/15/2017	<0.005	
6/5/2018	<0.005	
10/2/2018	<0.005	
8/22/2019	<0.005	
10/21/2019	<0.005	
3/24/2020	<0.005	
3/25/2020		0.0031 (J)

Time Series

Constituent: Fluoride (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	0.19 (J)		
10/20/2016	0.13 (J)		
1/25/2017	0.22 (J)		
5/25/2017	0.12 (J)		
8/11/2017	0.12 (J)		
11/15/2017	0.05 (J)		
6/5/2018	0.15 (J)		
10/2/2018	0.22 (J)		
4/2/2019	0.2 (J)		
6/18/2019	0.14 (J)		
8/22/2019	0.12 (J)		
10/21/2019	0.15 (J)		
1/3/2020		0.36	
3/24/2020	0.085 (J)		
3/25/2020		0.34	
3/27/2020			0.29

Time Series

Constituent: Lead (mg/L) Analysis Run 6/29/2020 12:07 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32
8/30/2016	<0.005	
10/20/2016	<0.005	
1/25/2017	<0.005	
5/25/2017	<0.005	
8/11/2017	0.0001 (J)	
11/15/2017	0.0002 (J)	
6/5/2018	<0.005	
10/2/2018	<0.005	
8/22/2019	<0.005	
10/21/2019	9.7E-05 (J)	
3/24/2020	0.00012 (J)	
3/25/2020		<0.005

Time Series

Constituent: Lithium (mg/L) Analysis Run 6/29/2020 12:08 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	<0.03		
10/20/2016	<0.03		
1/25/2017	<0.03		
5/25/2017	<0.03		
8/11/2017	<0.03		
11/15/2017	<0.03		
6/5/2018	<0.03		
10/2/2018	<0.03		
8/22/2019	<0.03		
10/21/2019	<0.03		
3/24/2020	<0.03		
3/25/2020		0.034	
3/27/2020			<0.03

Time Series

Constituent: Mercury (mg/L) Analysis Run 6/29/2020 12:08 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)
8/30/2016	4.3E-05 (J)
10/20/2016	<0.0005
1/25/2017	4E-05 (J)
5/25/2017	7E-05 (J)
8/11/2017	<0.0005
11/15/2017	<0.0005
6/5/2018	<0.0005
10/2/2018	<0.0005
8/22/2019	<0.0005

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 6/29/2020 12:08 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	0.0026 (J)		
10/20/2016	0.005 (J)		
1/25/2017	0.0054 (J)		
5/25/2017	0.0018 (J)		
8/11/2017	0.0029 (J)		
11/15/2017	0.0018 (J)		
6/5/2018	0.0028 (J)		
10/2/2018	<0.01		
8/22/2019	0.003 (J)		
10/21/2019	0.0049 (J)		
1/3/2020		0.06	
1/22/2020		0.059	
3/24/2020	0.0091 (J)		
3/25/2020		0.062	
3/27/2020			0.012
4/24/2020			0.062

Time Series

Constituent: pH (s.u.) Analysis Run 6/29/2020 12:08 PM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	6.75		
10/20/2016	6.73		
1/25/2017	6.88		
5/25/2017	6.55		
8/11/2017	6.56		
11/15/2017	6.47		
6/5/2018	6.66		
10/2/2018	6.44		
4/2/2019	6.57		
8/22/2019	6.51		
10/21/2019	6.69		
3/24/2020	7.08		
3/25/2020		6.86	
3/27/2020			6.82
4/24/2020			6.82

Time Series

Constituent: Selenium (mg/L) Analysis Run 6/29/2020 12:08 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)
8/30/2016	<0.01
10/20/2016	<0.01
1/25/2017	<0.01
5/25/2017	<0.01
8/11/2017	<0.01
11/15/2017	<0.01
6/5/2018	<0.01
10/2/2018	0.0015 (J)
8/22/2019	<0.01

Time Series

Constituent: Sulfate (mg/L) Analysis Run 6/29/2020 12:08 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	49		
10/20/2016	49		
1/25/2017	48		
5/25/2017	48		
8/11/2017	47		
11/15/2017	49		
6/5/2018	48.9		
10/2/2018	48.6		
4/2/2019	39.6		
6/18/2019	44.5		
10/21/2019	45.6		
1/3/2020		210	
3/24/2020	25.9		
3/25/2020		204	
3/27/2020			111

Time Series

Constituent: Thallium (mg/L) Analysis Run 6/29/2020 12:08 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

HGWA-122 (bg)

8/30/2016	<0.001
10/20/2016	<0.001
1/25/2017	<0.001
5/25/2017	<0.001
8/11/2017	<0.001
11/15/2017	<0.001
6/5/2018	<0.001
10/2/2018	<0.001
8/22/2019	<0.001

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 6/29/2020 12:08 PM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	280		
10/20/2016	265		
1/25/2017	371		
5/25/2017	237		
8/11/2017	253		
11/15/2017	261		
6/5/2018	276		
10/2/2018	256		
4/2/2019	814 (o)		
6/18/2019	233		
10/21/2019	296		
1/3/2020		645	
3/24/2020	278		
3/25/2020		641	
3/27/2020			482

Time Series

Constituent: Total Radium (pCi/L) Analysis Run 6/29/2020 12:08 PM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-3

	HGWA-122 (bg)	MW-32
8/30/2016	0.972 (U)	
10/20/2016	0.496 (U)	
1/25/2017	1.13 (U)	
5/25/2017	0.192 (U)	
8/11/2017	0.908 (U)	
11/15/2017	0.662 (U)	
6/5/2018	0.593 (U)	
10/2/2018	1.37	
8/22/2019	1.19 (U)	
10/21/2019	0.772 (U)	
3/24/2020	0.379 (U)	
3/25/2020		1.51

FIGURE B.

Interwell Prediction Limits - Significant Results (New Wells)

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 6/16/2020, 9:41 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MW-32	0.3919	n/a	3/25/2020	1.2	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	MW-39	0.3919	n/a	3/27/2020	0.7	Yes	12	0.2577	0.06404	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	MW-32	90.96	n/a	3/25/2020	170	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	MW-39	90.96	n/a	3/27/2020	120	Yes	12	74.75	7.733	0	None	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-32	0.2507	n/a	3/25/2020	0.34	Yes	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-39	0.2507	n/a	3/27/2020	0.29	Yes	13	0.1458	0.0509	0	None	No	0.002505	Param Inter 1 of 2
Sulfate (mg/L)	MW-32	49	n/a	3/25/2020	204	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-39	49	n/a	3/27/2020	111	Yes	12	n/a	n/a	0	n/a	n/a	0.009966	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-32	353.9	n/a	3/25/2020	641	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-39	353.9	n/a	3/27/2020	482	Yes	11	273.3	37.43	0	None	No	0.002505	Param Inter 1 of 2

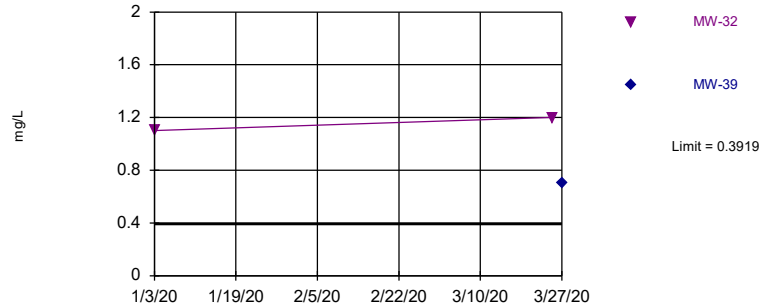
Interwell Prediction Limits - All Results (New Wells)

Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix Printed 6/16/2020, 9:41 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg	N Bg	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MW-32	0.3919	n/a	3/25/2020	1.2	Yes	12	0.2577	0.06404	0	None	No	No	0.002505	Param Inter 1 of 2
Boron (mg/L)	MW-39	0.3919	n/a	3/27/2020	0.7	Yes	12	0.2577	0.06404	0	None	No	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	MW-32	90.96	n/a	3/25/2020	170	Yes	12	74.75	7.733	0	None	No	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	MW-39	90.96	n/a	3/27/2020	120	Yes	12	74.75	7.733	0	None	No	No	0.002505	Param Inter 1 of 2
Chloride (mg/L)	MW-32	4.5	n/a	3/25/2020	2.2	No	12	n/a	n/a	0	n/a	n/a	n/a	0.009966	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-39	4.5	n/a	3/27/2020	1.8	No	12	n/a	n/a	0	n/a	n/a	n/a	0.009966	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-32	0.2507	n/a	3/25/2020	0.34	Yes	13	0.1458	0.0509	0	None	No	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-39	0.2507	n/a	3/27/2020	0.29	Yes	13	0.1458	0.0509	0	None	No	No	0.002505	Param Inter 1 of 2
pH (s.u.)	MW-32	7.045	6.27	3/25/2020	6.86	No	12	6.658	0.1848	0	None	No	No	0.001253	Param Inter 1 of 2
pH (s.u.)	MW-39	7.045	6.27	4/24/2020	6.82	No	12	6.658	0.1848	0	None	No	No	0.001253	Param Inter 1 of 2
Sulfate (mg/L)	MW-32	49	n/a	3/25/2020	204	Yes	12	n/a	n/a	0	n/a	n/a	n/a	0.009966	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-39	49	n/a	3/27/2020	111	Yes	12	n/a	n/a	0	n/a	n/a	n/a	0.009966	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-32	353.9	n/a	3/25/2020	641	Yes	11	273.3	37.43	0	None	No	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-39	353.9	n/a	3/27/2020	482	Yes	11	273.3	37.43	0	None	No	No	0.002505	Param Inter 1 of 2

Exceeds Limit: MW-32, MW-39

Prediction Limit
Interwell Parametric

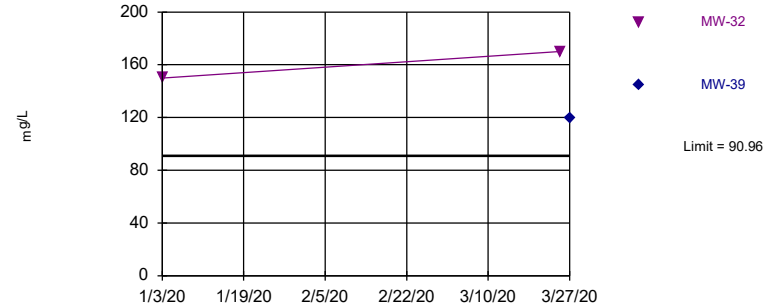


Background Data Summary: Mean=0.2577, Std. Dev.=0.06404, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.873, critical = 0.805. Kappa = 2.096 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 2 points to limit. Assumes 1 future value.

Constituent: Boron Analysis Run 6/16/2020 9:38 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Exceeds Limit: MW-32, MW-39

Prediction Limit
Interwell Parametric

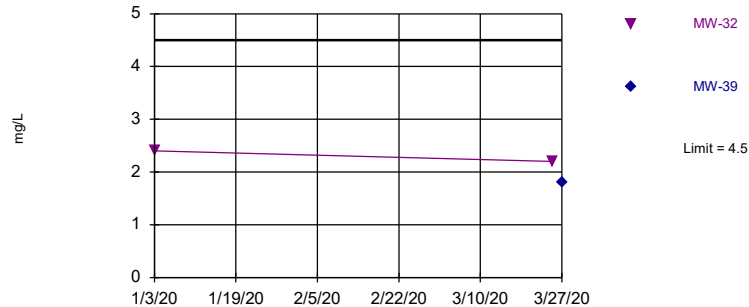


Background Data Summary: Mean=74.75, Std. Dev.=7.733, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9823, critical = 0.805. Kappa = 2.096 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 2 points to limit. Assumes 1 future value.

Constituent: Calcium Analysis Run 6/16/2020 9:38 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Within Limit

Prediction Limit
Interwell Non-parametric

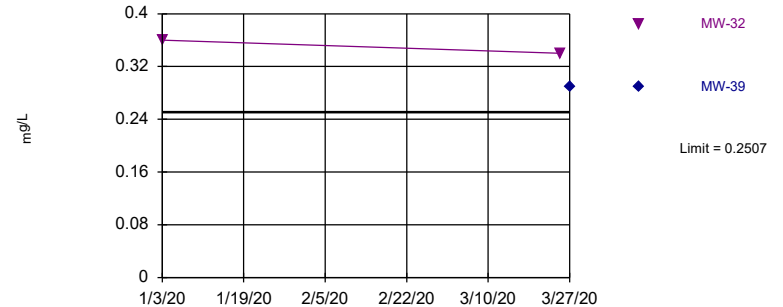


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Annual per-constituent alpha = 0.05832. Individual comparison alpha = 0.009966 (1 of 2). Comparing 2 points to limit. Assumes 1 future value.

Constituent: Chloride Analysis Run 6/16/2020 9:38 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Exceeds Limit: MW-32, MW-39

Prediction Limit
Interwell Parametric

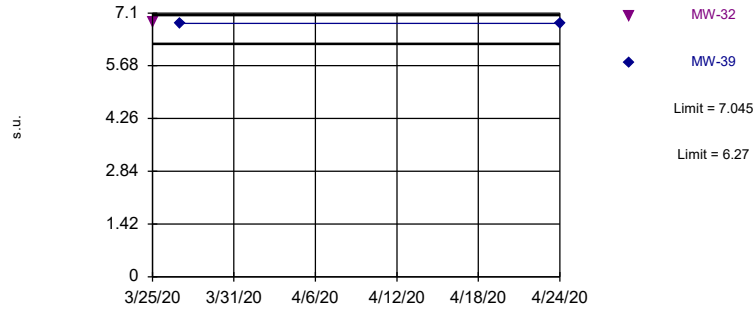


Background Data Summary: Mean=0.1458, Std. Dev.=0.0509, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9472, critical = 0.814. Kappa = 2.062 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 2 points to limit. Assumes 1 future value.

Constituent: Fluoride Analysis Run 6/16/2020 9:38 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Within Limits

Prediction Limit
Interwell Parametric

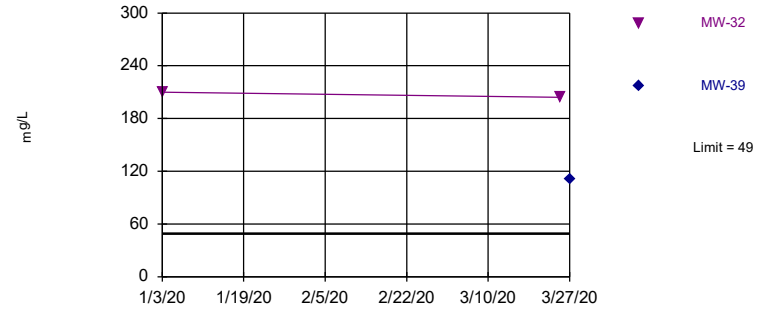


Background Data Summary: Mean=6.658, Std. Dev.=0.1848, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9147, critical = 0.805. Kappa = 2.096 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001253. Comparing 2 points to limit. Assumes 1 future value.

Constituent: pH Analysis Run 6/16/2020 9:38 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Exceeds Limit: MW-32, MW-39

Prediction Limit
Interwell Non-parametric

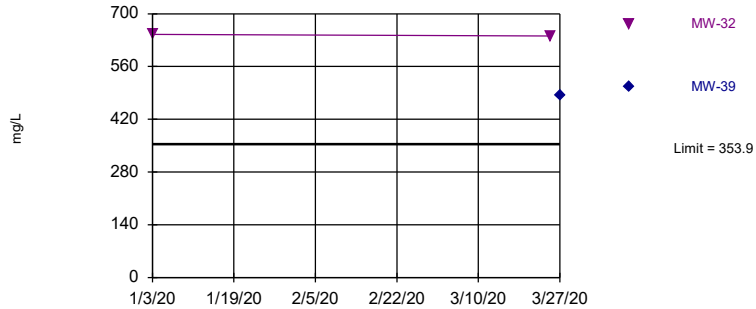


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Annual per-constituent alpha = 0.05832. Individual comparison alpha = 0.009966 (1 of 2). Comparing 2 points to limit. Assumes 1 future value.

Constituent: Sulfate Analysis Run 6/16/2020 9:38 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Exceeds Limit: MW-32, MW-39

Prediction Limit
Interwell Parametric



Background Data Summary: Mean=273.3, Std. Dev.=37.43, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8195, critical = 0.792. Kappa = 2.155 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 2 points to limit. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 6/16/2020 9:38 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 6/16/2020 9:41 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	0.277		
10/20/2016	0.336		
1/25/2017	0.274		
5/25/2017	0.298		
8/11/2017	0.285		
11/15/2017	0.322		
6/5/2018	0.24		
10/2/2018	0.28		
4/2/2019	0.18		
6/18/2019	0.25		
10/21/2019	0.25		
1/3/2020		1.1	
3/24/2020	0.1		
3/25/2020		1.2	
3/27/2020			0.7

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 6/16/2020 9:41 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	71.3		
10/20/2016	90.3		
1/25/2017	77.3		
5/25/2017	69.9		
8/11/2017	79.5		
11/15/2017	72.8		
6/5/2018	71.4		
10/2/2018	66.6		
4/2/2019	60.9		
6/18/2019	75		
10/21/2019	80.8		
1/3/2020		150	
3/24/2020	81.2		
3/25/2020		170	
3/27/2020			120

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 6/16/2020 9:41 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	2.8		
10/20/2016	2.8		
1/25/2017	2.8		
5/25/2017	2.9		
8/11/2017	3		
11/15/2017	3.1		
6/5/2018	3		
10/2/2018	3.1		
4/2/2019	3.6		
6/18/2019	3.2		
10/21/2019	4.5		
1/3/2020		2.4	
3/24/2020	4.5		
3/25/2020		2.2	
3/27/2020			1.8

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 6/16/2020 9:41 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	0.19 (J)		
10/20/2016	0.13 (J)		
1/25/2017	0.22 (J)		
5/25/2017	0.12 (J)		
8/11/2017	0.12 (J)		
11/15/2017	0.05 (J)		
6/5/2018	0.15 (J)		
10/2/2018	0.22 (J)		
4/2/2019	0.2 (J)		
6/18/2019	0.14 (J)		
8/22/2019	0.12 (J)		
10/21/2019	0.15 (J)		
1/3/2020		0.36	
3/24/2020	0.085 (J)		
3/25/2020		0.34	
3/27/2020			0.29

Prediction Limit

Constituent: pH (s.u.) Analysis Run 6/16/2020 9:41 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	6.75		
10/20/2016	6.73		
1/25/2017	6.88		
5/25/2017	6.55		
8/11/2017	6.56		
11/15/2017	6.47		
6/5/2018	6.66		
10/2/2018	6.44		
4/2/2019	6.57		
8/22/2019	6.51		
10/21/2019	6.69		
3/24/2020	7.08		
3/25/2020		6.86	
3/27/2020			6.82
4/24/2020			6.82

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/16/2020 9:41 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	49		
10/20/2016	49		
1/25/2017	48		
5/25/2017	48		
8/11/2017	47		
11/15/2017	49		
6/5/2018	48.9		
10/2/2018	48.6		
4/2/2019	39.6		
6/18/2019	44.5		
10/21/2019	45.6		
1/3/2020		210	
3/24/2020	25.9		
3/25/2020		204	
3/27/2020			111

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 6/16/2020 9:41 AM View: PL's Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-3_SanitasMatrix

	HGWA-122 (bg)	MW-32	MW-39
8/30/2016	280		
10/20/2016	265		
1/25/2017	371		
5/25/2017	237		
8/11/2017	253		
11/15/2017	261		
6/5/2018	276		
10/2/2018	256		
4/2/2019	814 (o)		
6/18/2019	233		
10/21/2019	296		
1/3/2020		645	
3/24/2020	278		
3/25/2020		641	
3/27/2020			482