Prepared for

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

2020 SEMIANNUAL GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT

GEORGIA POWER COMPANY
PLANT HAMMOND ASH POND 4 (AP-4)

Prepared by

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581

February 2021

Geosyntec
consultants

CERTIFICATION STATEMENT

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

Whitney Law
Georgia Professional Engineer No. 36641

February 26, 2021
Date

EXECUTIVE SUMMARY

This summary of the *2020 Semiannual Groundwater Monitoring and Corrective Action Report* provides the status of groundwater monitoring and corrective action program between July 2020 and December 2020 at the Georgia Power Company (Georgia Power) Plant Hammond Ash Pond 4 (AP-4) (the Site). This summary was prepared by Geosyntec Consultants, Inc. (Geosyntec) on behalf of Georgia Power to meet the requirements listed in Part A, Section 6[1] of the U.S. Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D).

Figure 1. Plant Hammond and the Site

Plant Hammond is located at 5963 Alabama Highway SW, approximately 10 miles west of Rome in Floyd County, Georgia. Plant Hammond is a four-unit, coal-fired electric generating facility. All four units at Plant Hammond were decommissioned in July 2019 and no longer produce electricity. Dry ash stacking operations in AP-4 began in 1994 and continued until 2010; AP-4 received both fly ash and bottom ash during this period. AP-4 was closed in 2012; therefore, AP-4 is not subject to the Federal monitoring requirements The Site is located on the western portion of the Plant Hammond property shown on Figure 1. The Georgia Environmental Protection Division (GA EPD) approved Closure permit No. 057-025D(CCR) for AP-4 on January 27, 2021. Georgia Power plans to perform closure by removal of CCR from AP-4.

Groundwater at the Site is monitored using a monitoring system comprised of five upgradient and eight downgradient wells installed between August 2012 and August 2020 that meet federal and state monitoring requirements. Groundwater monitoring-related activities have been performed at AP-4 since August 2016 in support of establishing the detection monitoring program for the CCR unit in accordance with § 257.94. During the 2020 annual reporting period, the Site remained in assessment monitoring.

During the 2020 semiannual reporting period, Geosyntec conducted groundwater sampling events in August and September 2020. Groundwater samples were submitted

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

to Pace Analytical Services, LLC, for analysis. Per the CCR rule, groundwater results for September 2020 data were evaluated in accordance with the certified statistical methods. That evaluation identified statistically significant values of Appendix III[2] constituents, as presented in the table below. No statistically significant levels of Appendix IV[3] constituents were identified during the reporting period.

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

Appendix III Parameter	September 2020
Boron	HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118
Calcium	HGWC-102, HGWC-103, HGWC-105, HGWC-118
Chloride	HGWC-102, HGWC-103, HGWC-117
Sulfate	HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118
Total Dissolved Solids	HGWC-102, HGWC-103, HGWC-105, HGWC-117, HGWC-118

[2] Boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS)
[3] Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, and combined radium 226 + 228

Geosyntec consultants

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AP	ash pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
cm/sec	centimeters per second
DO	dissolved oxygen
ft/day	feet per day
ft/ft	feet per foot
GA EPD	Georgia Environmental Protection Division
GCL	geosynthetic clay liner
Georgia Power	Georgia Power Company
GWPS	Groundwater Protection Standard
HAR	Hydrogeologic Assessment Report
K_h	horizontal hydraulic conductivity
mg/L	milligram per liter
NAD	North American Datum
NAVD	North American Vertical Datum
NELAP	National Environmental Laboratory Accreditation Program
NTU	oxidation-reduction potential
ORP	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
SSL	statistically significant level
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 has prepared this *2020 Semiannual Groundwater Monitoring & Corrective Action Report* to document groundwater monitoring activities conducted at Georgia Power Company (Georgia Power) Plant Hammond (Site) Ash Pond 4 (AP-4) for the reporting period of July 2020 through December 2020.

Groundwater monitoring and reporting for the CCR unit is performed in accordance with the monitoring requirements of the GA EPD Rules for Solid Waste Management 391-3-4-.10(6), but also 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], specifically § 257.90 through 257.95 of the Federal CCR rule. 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-4 was closed in 2012; therefore, AP-4 is not subject to the Federal monitoring requirements. A permit application for AP-4 was submitted to GA EPD in November 2018. GA EPD approved Closure permit No. 057-025D(CCR) for AP-4 on January 27, 2021. Groundwater monitoring has been initiated in order to meet the GA EPD CCR requirements.

Due to statistically significant increases (SSIs) of Appendix III constituents identified in the *2019 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2019), Georgia Power initiated an assessment monitoring program for AP-4 in August 2019. Since then, Georgia Power has routinely sampled the AP-4 monitoring well network in accordance with the assessment monitoring program as outlined in § 257.95.

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 2019 and no longer produce electricity.

AP-4 was commissioned in 1986 as a surface impoundment with a corresponding surface area of approximately 54 acres. Dry ash stacking operations in AP-4 began in 1994 and continued until 2010; AP-4 received both fly ash and bottom ash during this period. AP-4 was capped in place in 2011-2012 in accordance with the GA EPD regulations regarding landfill closures. AP-4 was graded, engineered with drainage, and capped with a geosynthetic clay liner (GCL) and soil cover.

1.2 Regional Geology & Hydrogeologic Setting

The following section summarizes the geologic and hydrogeologic conditions at AP-4 as described in the *Hydrogeologic Assessment Report Revision 01 – Ash Pond 4* (HAR Rev 01) submitted to GA EPD under separate cover in support of the AP-4 closure permit application (Geosyntec, 2020a).

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-4 is underlain by the lower units of the Cambrian age Conasauga Formation, consisting of mostly calcareous shale. Based on review of subsurface investigations, the bedrock underneath AP-4 was described as predominantly shale. AP-4 is underlain primarily by five lithologic units: (i) terrace alluvium, (ii) colluvium, (iii) residuum, (iv) partially weathered shale bedrock, and (v) unweathered shale bedrock.

Based on subsurface investigations, the alluvial deposits generally grade from a silt and silty clay to a clayey sand and silty sand to a sand and gravelly sand at depth. The colluvium consists of silty sand, silty clay with the presence of angular fragments of rocks/materials not expected in the lower units of the Conasauga, such as chert, sandstone, limestone, or coal. Residual or native soils have been derived from the in-place weathering of the shale bedrock. The residuum is generally described as brown to yellow brown firm clayey silt with weathered shale fragments. The partially weathered shale zone occurs as an intermediate weathering stage between the residuum and the unweathered shale bedrock. The weathered material is described as black to dark gray to

dark red hard, fissile shale and claystone. The unweathered shale bedrock was not encountered or directly observed in the historical borings advanced at AP-4. However, based on geologic conditions in the region, weathering, fracturing and jointing decreases with depth and the weathered rock material grades into competent bedrock.

1.2.2 Hydrogeologic Setting

The uppermost aquifer at AP-4 is a regional groundwater aquifer that occurs primarily in the alluvium, colluvium, and residuum, but also to some degree within the weathered and fractured bedrock. Based on observations of alluvium, colluvium, and residuum soil types and horizontal conductivity values, the movement of groundwater in the soil can be characterized as low-to moderate permeability, porous media flow. The groundwater flow in the shallow underlying bedrock is characterized as fracture flow, and due to the preponderance of shale beneath AP-4, is expected to be very low permeability. Groundwater flow direction is generally from north to south.

1.3 Groundwater Monitoring Well Network

In accordance with § 257.91, a groundwater monitoring system was installed at AP-4 that (1) consists of a sufficient number of wells, (2) is installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer, and (3) represents the groundwater quality both upgradient of the units (i.e., background conditions) and passing the waste boundary of the units. The number, spacing, and depths of the groundwater monitoring wells were selected based on the characterization of site-specific hydrogeologic conditions.

The compliance monitoring well network for AP-4 consists of thirteen monitoring wells. A network of piezometers has been installed at the Site that are used to gauge water levels to define groundwater flow direction and gradients. The locations of the compliance monitoring well network and piezometers associated with AP-4 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-4 between July and December 2020. All groundwater sampling was performed in accordance with § 257.93.

2.1 Monitoring Well Installation and Maintenance

Two additional compliance monitoring wells (HGWA-47 and HGWA-48D) were installed in August 2020 to provide additional data to characterize background groundwater quality and flow conditions. A well installation report that includes detailed boring and well construction logs for the installation of these wells is provided in **Appendix A**. The installation report was submitted to GA EPD under separate cover in November 2020.

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 subsequent groundwater sampling event. The well inspection forms for the August and September 2020 events are provided in **Appendix B**.

The AP-4 well network was resurveyed by GEL Solutions May 4-6, 2020; a subsequent survey of the wells installed at the Site after May 2020 was conducted on September 1-2, 2020. A memorandum was prepared to update and modify well construction details based on the updated survey data and included updated boring and well construction logs for the entire AP-4 well network. The 'September 2020 Well Installation Addendum' was submitted to GA EPD on September 29, 2020 (Geosyntec, 2020b) and included the survey data certified by a Georgia-licensed surveyor.

2.2 Assessment Monitoring

Georgia Power initiated an assessment monitoring program for groundwater at AP-4 in August 2019. An Assessment Monitoring Program Notification was prepared for AP-4 on November 13, 2019, pursuant to § 257.94(e)(3) and placed in the Operating Record as required by § 257.105(h)(5).

The initial annual Appendix IV sampling event for this reporting period was conducted in August 2020 with the semiannual assessment monitoring events occurring in

September 2020. The number of groundwater samples collected for analysis and the dates the samples were collected at AP-4 during this reporting period is summarized in **Table 2**. Details of these events and analytical results are discussed in Section 3, while the statistical results are discussed in Section 4.

2.3 Additional Groundwater Sampling

During this reporting period, additional samples were collected at HGWA-47 and HGWA-48D to characterize background groundwater conditions, as shown on **Table 2**. For each event, the samples were analyzed for the complete list of Appendix III and Appendix IV constituents. The laboratory reports associated with the groundwater sampling events are provided in **Appendix C**.

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-4 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-4 wells and piezometers and used to calculate the groundwater elevations. The calculated groundwater elevations for the August 2020 and September 2020 sampling events are presented in **Table 3**. The 2020 survey data was used to calculate the groundwater elevations for two events.

The groundwater elevation data were used to prepare potentiometric surface contour maps for the August and September 2020 events, which are presented on **Figures 3** and **4**, respectively. Groundwater in the AP-4 area flows under the influence of topography from slightly higher ground surface elevations on the northern side of AP-4 towards lower elevations to the south of AP-4 along the Coosa River.

3.2 Groundwater Gradient and Flow Velocity

The representative groundwater hydraulic gradients within the uppermost aquifer beneath AP-4 were calculated using the August and September 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. Given the surface area covered by AP-4, hydraulic gradients were calculated along the eastern, central, and western portions of the unit. The well pairs correlating to these flow areas are, respectively: GWA-14 and HGWC-118; HGWA-113 and HGWC-102; HGWA-111 and HGWC-107. **Table 4** provides the calculated hydraulic gradients. The calculated gradients from the three portions were averaged for each sampling event and then averaged for the reporting period to provide a representative gradient of 0.015 feet per foot (ft/ft) across AP-4.

The approximate horizontal flow velocity associated with AP-4 groundwater was calculated using the following derivative of Darcy's Law.

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

where:

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

K_h = Average horizontal hydraulic conductivity $\left(\frac{feet}{day}\right)$

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

n_e = Effective porosity

Aquifer testing was conducted by Southern Company Services (SCS) in 2013 to evaluate hydraulic conditions in the vicinity of AP-4. Results of these field events are discussed in detail in the HAR Rev 01. Horizontal hydraulic conductivity (K_h) was estimated for units above the top of bedrock by performing slug tests. The tests were conducted at wells screened in the terrace alluvium or colluvial material; a geometric mean for K_h of 5.86 x 10^{-4} centimeters per second (cm/sec) [1.67 feet per day (ft/day)] was calculated from the slug test data for the two units. Since majority of the wells are screened in either alluvial or alluvial/colluvial materials, no hydraulic conductivity testing was conducted on the residuum, weathered shale, or unweathered shale.

The groundwater flow velocity calculation is performed using the geometric mean for K_h of 1.67 ft/day. An estimated effective porosity of 0.15 is used to represent average conditions for the silty clay alluvium/colluvium, derived based on review of literature, observed site lithology, and professional judgement. With these variables determined, and accounting for the representative hydraulic gradient discussed above, the representative groundwater flow velocity underneath AP-4 was calculated to be 0.17 ft/day for the reporting period.

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). The wells were purged and sampled using a dedicated bladder pump equipped with dedicated tubing except for well HGWA-48D which was sampled using a portable bladder pump. Wells HGWC-102 and HGWA-47 were sampled using a peristaltic pump. All non-disposable equipment was decontaminated before use and between well locations.

A SmarTroll or Aqua TROLL (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 ± 0.1 Standard Units (s.u.).
- Conductivity ± 5%.
- ±0.2 milligrams per liter (mg/L) or ±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. (Pace Analytical) in Norcross, Georgia following chain-of-custody protocol. The field sampling forms generated during the monitoring events conducted in August 2020 and September 2020, as well as forms from additional sampling events for HGWC-102, HGWA-47 and HGWA-48D, are provided in **Appendix C**.

3.4 Laboratory Analyses

Laboratory analyses were performed by 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 2020 and September 2020 sampling events, as well as additional background sampling events for HGWC-102, HGWA-47 and HGWA-48D 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). Where necessary, the data were qualified with supporting documentation and justifications. The data are considered usable for meeting project objectives and the results are considered valid. The associated data validation report is provided in **Appendix C**, along 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), Georgia Power 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 data from the current reporting period through December 2020 were analyzed by Groundwater Stats Consulting (GSC).

4.1 Statistical Methods

Analytical data 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

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) pool upgradient well data from wells HGWA-47, HGWA-48D, HGWA-111, HGWA-112, and HGWA-113 to establish a background limit for an individual constituent, and the most recent sample from each downgradient well is compared to the same limit for each parameter. 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. In accordance with Section 21.1.1 of the Unified Guidance (USEPA, 2009), four independent data are the minimum population size recommended to construct confidence intervals required to assess statistically significant levels (SSL) for Appendix IV constituents. Those confidence intervals are compared to the state 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, an SSL exceedance is identified.

As described in the GA EPD CCR Rule, the 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.

USEPA revised the Federal CCR Rule on July 30, 2018, specifying GWPS for cobalt, lead, lithium, and molybdenum as described in § 257.95(h)(2). Presently those rule-specified GWPS have not yet been incorporated into the current GA EPD Rules for Solid Waste Management 391-3-4-.10(6)(a).

Following the above 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 statistical analyses, Appendix III constituents continue to exceed background PLs for the September 2020 assessment monitoring event. Pursuant to § 257.95(f), assessment monitoring should continue based on these statistical results.

No SSL of Appendix IV constituents was identified during the reporting period using the established state GWPS.

5.0 MONITORING PROGRAM STATUS

Based on the statistical evaluation results presented for the reporting period, SSIs of Appendix III constituents have not returned to background levels; however, no SSLs of Appendix IV constituents were identified. Pursuant to § 257.95(f), Georgia Power will continue to monitor groundwater at AP-4 in accordance with the assessment monitoring program regulations of § 257.95.

6.0 CONCLUSIONS & FUTURE ACTIONS

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

In August 2019, Georgia Power initiated an assessment monitoring program for AP-4 in accordance with the requirements of § 257.95. During the current reporting period of July 2020 to December 2020, Georgia Power conducted an initial Appendix IV assessment monitoring event in August 2020 and the first semiannual assessment monitoring event in September 2020. Statistical evaluations of the September 2020 groundwater monitoring data did not identify an SSL of any Appendix IV constituent. Georgia Power will continue to monitor groundwater in accordance with the assessment monitoring program as specified in § 257.95. The next scheduled assessment monitoring event for AP-4 is scheduled for March 2021.

7.0 REFERENCES

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TABLES

Table 1
Monitoring Well Network Summary
Plant Hammond AP-4, Floyd County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing [1]	Easting [1]	Top of Casing Elevation [2] (ft)	Top of Screen Elevation [2] (ft)	Bottom of Screen Elevation [2] (ft)	Well Depth (ft BTOC) [3]	Screen Interval Length
Compliance Monitoring Well									
HGWA-47	Upgradient	8/21/2020	1548990.96	1934171.84	580.33	546.84	536.84	43.74	10
HGWA-48D	Upgradient	8/20/2020	1548989.39	1934178.15	580.26	517.54	507.54	72.97	10
HGWA-111	Upgradient	8/21/2012	1548834.26	1935222.81	591.75	558.48	548.48	43.67	10
HGWA-112	Upgradient	8/21/2012	1548885.63	1935647.00	596.27	566.52	556.52	40.15	10
HGWA-113	Upgradient	10/2/2012	1548944.62	1935990.09	594.58	568.87	558.87	36.11	10
HGWC-101	Downgradient	8/7/2012	1547725.50	1936369.58	578.85	551.31	541.31	37.94	10
HGWC-102	Downgradient	8/7/2012	1547713.50	1936033.33	577.54	550.51	540.51	37.43	10
HGWC-103	Downgradient	8/8/2012	1547848.88	1935732.96	580.79	553.51	543.51	37.68	10
HGWC-105	Downgradient	8/8/2012	1547855.56	1935110.36	582.09	547.72	537.72	44.67	10
HGWC-107	Downgradient	8/8/2012	1547909.99	1934442.24	579.31	551.51	541.51	38.20	10
HGWC-109	Downgradient	8/15/2012	1548627.41	1934362.77	576.77	555.81	545.81	31.36	10
HGWC-117	Downgradient	8/14/2012	1548100.77	1937180.43	581.98	552.12	542.12	40.26	10
HGWC-118	Downgradient	10/1/2012	1547980.56	1936946.37	579.02	548.51	538.51	40.91	10
Piezometer									
MW-12	Downgradient	10/21/2014	1547853.78	1937525.46	583.27	555.84	545.84	37.83	10
GWC-4	Downgradient	8/8/2012	1547898.31	1935398.70	580.65	543.47	533.47	47.58	10
GWC-6	Downgradient	8/13/2012	1547843.93	1934800.45	581.63	553.90	543.90	38.13	10
GWC-8	Downgradient	8/9/2012	1548167.13	1934342.94	579.99	549.47	539.47	40.92	10
GWA-14	Upgradient	10/2/2012	1548982.59	1936642.58	592.14	561.40	551.40	41.14	10
GWA-15	Upgradient	8/22/2012	1548766.17	1936808.47	591.56	571.44	561.44	30.52	10
GWA-16	Upgradient	8/21/2012	1548592.74	1937210.99	582.55	569.94	559.94	23.01	10
GWC-19	Upgradient	8/14/2012	1547892.89	1936572.97	579.83	554.04	544.04	36.19	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 certified May 11, 2020. Wells HGWA-47 and HGWA-48D survey data certified September 10, 2020.

(2) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Survey data certified May 11, 2020. Wells HGWA-47 and HGWA-48D survey data certified September 10, 2020.

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

Table 2

Groundwater Sampling Event Summary

Plant Hammond AP-4, Floyd County, Georgia

Well ID	Hydraulic Location	July 21, 2020	August 24-27, 2020	September 18-28, 2020	November 10-11, 2020	December 15, 2020
Purpose of Sampling Event:		**Background**	**App. IV Annual**	**Assessment**	**Background**	**Background**
HGWA-47	Upgradient	--	--	X	X	X
HGWA-48D	Upgradient	--	--	X	X	X
HGWA-111	Upgradient	--	X	X	--	--
HGWA-112	Upgradient	--	X	X	--	--
HGWA-113	Upgradient	--	X	X	--	--
HGWC-101	Downgradient	--	X	X	--	--
HGWC-102	Downgradient	X	X	X	--	--
HGWC-103	Downgradient	--	X	X	--	--
HGWC-105	Downgradient	--	X	X	--	--
HGWC-107	Downgradient	--	X	X	--	--
HGWC-109	Downgradient	--	X	X	--	--
HGWC-117	Downgradient	--	X	X	--	--
HGWC-118	Downgradient	--	X	X	--	--

Table 3

Summary of Groundwater Elevations
Plant Hammond AP-4, Floyd County, Georgia

Well ID	Top of Casing Elevation [1] (ft)	August 24, 2020		September 14, 2020	
		Depth to Water (ft BTOC)	Groundwater Elevations (ft)	Depth to Water (ft BTOC)	Groundwater Elevations (ft)
Compliance Monitoring Well					
HGWA-47	580.33	--	--	9.15	571.18
HGWA-48D	580.26	--	--	9.05	571.21
HGWA-111	591.75	12.51	579.24	13.47	578.28
HGWA-112	596.27	12.40	583.87	14.60	581.67
HGWA-113	594.58	11.57	583.01	12.50	582.08
HGWC-101	578.85	13.27	565.58	13.60	565.25
HGWC-102	577.54	13.03	564.51	13.73	563.81
HGWC-103	580.79	13.91	566.88	14.03	566.76
HGWC-105	582.09	17.90	564.19	18.55	563.54
HGWC-107	579.31	15.11	564.20	15.67	563.64
HGWC-109	576.77	8.85	567.92	9.30	567.47
HGWC-117	581.98	16.80	565.18	17.40	564.58
HGWC-118	579.02	13.45	565.57	14.00	565.02
Piezometer					
MW-12	583.27	18.54	564.73	19.20	564.07
GWC-4	580.65	13.71	566.94	13.85	566.80
GWC-6	581.63	17.29	564.34	18.77	562.86
GWC-8	579.99	14.29	565.70	14.55	565.44
GWA-14	592.14	7.95	584.19	8.80	583.34
GWA-15	591.56	9.54	582.02	10.65	580.91
GWA-16	582.55	5.65	576.90	5.85	576.70
GWC-19	579.83	13.20	566.63	13.45	566.38

Notes:

-- = not applicable.

ft = feet.

ft BTOC = feet below top of casing.

(1) Elevations referenced to the North Amervican Vertical Datum of 1988 (NAVD88). Survey completed by GEL Solutions dated May 10, 2020 and September 10, 2020 (for wells HGWA-43D and HGWA-44D).

Table 4

Horizontal Groundwater Gradient and Flow Velocity Calculations

Plant Hammond AP-4, Floyd County, Georgia

Flow Path Direction [1]	Hydraulic Gradient - August 24, 2020 Data					Hydraulic Gradient - September 14, 2020 Data				
	h_1 (ft)	h_2 (ft)	Δl (ft)	Δh/Δl (ft/ft)	Avg Δh/Δl (ft/ft)	h_1 (ft)	h_2 (ft)	Δl (ft)	Δh/Δl (ft/ft)	Avg Δh/Δl (ft/ft)
Eastern Flow Path (GWA-14 to HGWC-118)	584.19	565.57	1,075	0.017	0.015	583.34	565.02	1,075	0.017	0.015
Central Flow Path (HGWA-113 to HGWC-102)	583.01	564.54	1,235	0.015		582.08	563.81	1,235	0.015	
Western Flow Path (HGWA-111 to HGWC-107)	579.24	564.20	1,210	0.012		578.28	563.64	1,210	0.012	

Flow Path Direction [1]	K_h (ft/d)	n	Average 2020 Δh/Δl (ft/ft)	Average 2020 V (ft/d)[2]
Eastern Flow Path (GWA-14 to HGWC-118)	1.67	0.15	0.015	0.17
Central Flow Path (HGWA-113 to HGWC-102)				
Western Flow Path (HGWA-111 to HGWC-107)				

Notes:

ft = feet.

ft/d = feet per day.

ft/ft = feet per foot.

h_1, h_2 = groundwater elevation for identified location.

Δh/Δl = hydraulic gradient.

K_h = horizontal hydraulic conductivity.

Δl = distance between identified location 1 and 2.

n = effective porosity.

V = groundwater flow velocity.

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

(2) Groundwater flow velocity equation: $V = [K_h * (\Delta h/\Delta l)] / n$.

Table 5

Summary of Groundwater Analytical Data

Plant Hammond AP-4, Floyd County, Georgia

	Well ID:	HGWA-47[4]	HGWA-47[4]	HGWA-47[4]	HGWA-48D[4]	HGWA-48D[4]	HGWA-48D[4]	HGWA-111	HGWA-111	HGWA-112	HGWA-112	HGWA-113	HGWA-113	HGWC-101	HGWC-101
	Sample Date:	9/18/2020	11/10/2020	12/15/2020	9/18/2020	11/11/2020	12/15/2020	8/25/2020	9/18/2020	8/25/2020	9/18/2020	8/25/2020	9/22/2020	8/27/2020	9/24/2020
	Parameter [1,2]														
APPENDIX III	Boron	0.0082 J	0.0064 J	<0.0052	0.015 J	0.014 J	0.0083 J	--	0.011 J	--	0.0080 J	--	0.021 J	--	0.10
	Calcium	62.2	73.3	72.5	51.8	61.3	61.3	--	32.2	--	6.5	--	7.9	--	20.3
	Chloride	2.7	2.7	2.9	2.6	2.6	2.7	--	2.6	--	5.2	--	1.5	--	5.5
	Fluoride	0.067 J	0.065 J	0.064 J	0.098 J	0.083 J	0.081 J	0.052 J	<0.050	<0.050	<0.050	0.17	0.16	<0.050	<0.050
	pH [3]	7.54	7.34	7.27	7.50	7.40	7.39	6.70	6.46	5.53	5.58	5.95	6.10	5.32	5.48
	Sulfate	3.5	2.3	2.4	9.5	4.5	4.2	--	1.0	--	<0.50	--	5.3	--	97.0
	TDS	195	229	233	224	221	239	--	139	--	62.0	--	84.0	--	170
APPENDIX IV	Antimony	<0.00028	<0.00028	<0.00028	0.00038 J	0.00031 J	<0.00028	<0.00028	--	<0.00028	--	<0.00028	--	<0.00028	--
	Arsenic	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078
	Barium	0.026	0.027	0.027	0.077	0.078	0.091	0.031	0.024	0.028	0.025	0.030	0.038	0.045	0.041
	Beryllium	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	0.000047 J	<0.000046	<0.000046	<0.000046	0.000046 J	0.000099 J	0.000057 J	0.000048 J
	Cadmium	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	0.00019 J	0.00014 J
	Chromium	0.0039 J	<0.00055	<0.00055	<0.00055	<0.00055	0.0013 J	0.0013 J	0.00077 J	0.0039 J	0.0037 J	0.0031 J	0.0046 J	<0.00055	<0.00055
	Cobalt	0.00049 J	<0.00038	<0.00038	<0.00038	<0.00038	0.00039 J	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	0.00074 J	0.0027 J	0.0021 J
	Fluoride	0.067 J	0.065 J	0.064 J	0.098 J	0.083 J	0.081 J	0.052 J	<0.050	<0.050	<0.050	0.17	0.16	<0.050	<0.050
	Lead	<0.000036	<0.000036	<0.000036	<0.000036	<0.000036	0.00015 J	0.00036 J	0.00026 J	0.00011 J	0.000065 J	0.00022 J	0.00096 J	<0.000036	<0.000036
	Lithium	0.0026 J	0.0028 J	0.0026 J	0.0051 J	0.0036 J	0.0045 J	0.0033 J	0.0021 J	<0.00081	<0.00081	0.0014 J	0.0018 J	<0.00081	<0.00081
	Mercury	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	--	<0.000078	--	<0.000078	--	<0.000078	--
	Molybdenum	0.0015 J	<0.00069	<0.00069	0.0026 J	0.0012 J	0.00097 J	<0.00069	--	<0.00069	--	<0.00069	--	<0.00069	--
	Comb. Radium 226/228	1.11 U	0.234 U	0.529 U	1.50 U	0.776 U	1.23 U	0.570 U	0.828 U	0.0182 U	1.15 U	0.587 U	0.551 U	0.109 U	0.625 U
	Selenium	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	--	<0.0016	--	<0.0016	--	<0.0016	--
	Thallium	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--

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 analytical minimum detectable concentration (MDC) (Specific to combined radium 226/228).

(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 HGWA-47, HGWA-48D and HGWC-102 were analyzed for the complete list of Appendix III and Appendix IV constituents to establish groundwater conditions.

Table 5

Summary of Groundwater Analytical Data

Plant Hammond AP-4, Floyd County, Georgia

	Well ID:	HGWC-102[4]	HGWC-102[4]	HGWC-102[4]	HGWC-103	HGWC-103	HGWC-105	HGWC-105	HGWC-107	HGWC-107	HGWC-109	HGWC-109	HGWC-117	HGWC-117	HGWC-118	HGWC-118
	Sample Date:	7/21/2020	8/27/2020	9/24/2020	8/27/2020	9/24/2020	8/27/2020	9/24/2020	8/27/2020	9/24/2020	8/27/2020	9/25/2020	8/27/2020	9/25/2020	8/26/2020	9/28/2020
	Parameter [1,2]															
APPENDIX III	Boron	3.0	2.7	2.9	--	2.2	--	1.2	--	0.88	--	0.28	--	1.1	--	0.65
	Calcium	120	106	120	--	91.3	--	92.9	--	55.4	--	48.5	--	72.8	--	88.9
	Chloride	7.2	7.1	7.2	--	6.0	--	3.9	--	3.5	--	4.1	--	16.1	--	4.0
	Fluoride	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.064 J	0.094 J	0.091 J	<0.050	<0.050	0.072 J	0.078 J
	pH [3]	5.72	5.70	5.82	5.82	5.60	6.45	6.63	6.09	6.11	6.64	6.79	5.92	6.01	6.97	7.03
	Sulfate	378	382	370	--	293	--	177	--	126	--	24.7	--	146	--	86.0
	TDS	669	663	696	--	517	--	411	--	253	--	188	--	340	--	332
APPENDIX IV	Antimony	<0.00028	<0.00028	<0.00028	<0.00028	--	<0.00028	--	<0.00028	--	<0.00028	--	<0.00028	--	<0.00028	--
	Arsenic	0.00083 J	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	0.0011 J	0.0017 J	<0.00078	<0.00078	<0.00078	<0.00078
	Barium	0.028	0.028	0.029	0.038	0.036	0.068	0.075	0.034	0.039	0.083	0.085	0.047	0.050	0.056	0.046
	Beryllium	<0.000046	<0.000046	<0.000046	0.000050 J	0.000088 J	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	0.000049 J	0.000066 J	<0.000046	<0.000046
	Cadmium	0.00083 J	0.00038 J	0.00032 J	0.00082 J	0.00076 J	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	0.00080 J	0.00089 J	<0.00012	<0.00012
	Chromium	<0.00055	<0.00055	<0.00055	0.00069 J	0.00081 J	<0.00055	0.00064 J	<0.00055	<0.00055	<0.00055	<0.00055	0.00057 J	0.00067 J	0.00098 J	0.0017 J
	Cobalt	0.00098 J	0.0010 J	0.0011 J	0.0019 J	0.0019 J	<0.00038	0.00044 J	<0.00038	<0.00038	0.00086 J	0.0010 J	0.011	0.011	0.00061 J	0.00048 J
	Fluoride	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.064 J	0.094 J	0.091 J	<0.050	<0.050	0.072 J	0.078 J
	Lead	<0.000036	<0.000036	<0.000036	0.00018 J	0.00028 J	<0.000036	0.000049 J	<0.000036	0.00034 J	<0.000036	<0.000036	0.00014 J	0.00019 J	0.00036 J	0.00022 J
	Lithium	0.0013 J	0.0011 J	0.0011 J	0.0016 J	0.0017 J	0.0037 J	0.0038 J	<0.00081	0.00098 J	0.0011 J	0.0010 J	0.0024 J	0.0031 J	0.0028 J	0.0022 J
	Mercury	<0.000078	<0.000078	<0.000078	<0.000078	--	<0.000078	--	<0.000078	--	<0.000078	--	<0.000078	--	<0.000078	--
	Molybdenum	<0.00069	<0.00069	<0.00069	<0.00069	--	<0.00069	--	<0.00069	--	<0.00069	--	<0.00069	--	<0.00069	--
	Comb. Radium 226/228	0.0938 U	1.17 U	1.42	0.370 U	0.804 U	0.416 U	1.11 U	0.264 U	0.576 U	0.989 U	0.584 U	0.193 U	0.155 U	1.19	0.613 U
	Selenium	<0.0016	<0.0016	<0.0016	<0.0016	--	<0.0016	--	<0.0016	--	<0.0016	--	<0.0016	--	<0.0016	--
	Thallium	<0.00014	<0.00014	<0.00014	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--

Table 6

Summary of Background Concentrations and Groundwater Protection Standards

Plant Hammond AP-4, Floyd County, Georgia

Analyte	Units	Background[(1)]	State GWPS[(2)]
Antimony	mg/L	0.003	0.006
Arsenic	mg/L	0.005	0.01
Barium	mg/L	0.078	2
Beryllium	mg/L	0.003	0.004
Cadmium	mg/L	0.0025	0.005
Chromium	mg/L	0.01	0.1
Cobalt	mg/L	0.005	0.005
Fluoride	mg/L	0.19	4
Lead	mg/L	0.005	0.005
Lithium	mg/L	0.03	0.03
Mercury	mg/L	0.0005	0.002
Molybdenum	mg/L	0.01	0.01
Selenium	mg/L	0.01	0.05
Thallium	mg/L	0.001	0.002
Combined Radium-226/228	pCi/L	1.4	5

Notes:

"mg/L" = milligrams per liter.

"pCi/L" = picocuries per liter.

"MCL" = maximum contaminant level.

1. Statistical analyses were performed on semiannual monitoring event for September 2020.
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 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

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

0 330 660 1,320

SCALE IN FEET

SITE LOCATION MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-4
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | FEBRUARY 2021

FIGURE 1

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\CCR Reports\AP-4\Figure 1_SiteMap.mxd 2/5/2021 4:53:30 PM

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2021\AP4\CCR Report\2021.02_SemiannualFigure 2_WellMap.mxd 2/24/2021 10:14:03 PM

N

LEGEND

- Compliance Monitoring Well
- Piezometer
- Approximate AP-4 Boundary
- Plant Hammond Property Boundary

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

0 150 300 600

SCALE IN FEET

MONITORING WELL NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-4
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

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FIGURE 2

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2021\AP4\CCR Report\2021.02_Semiannual\Figure 3 Potentiometric Surface Contour Map – 08.24.2020.mxd 2/26/2021 1:29:50 PM

GA-20 Alabama Hwy

HGWA-111
579.24

HGWA-112
583.87

HGWA-113
583.01

GWA-14
584.19

GWA-15
582.02

GWA-16
576.90

Unnamed Creek

HGWC-109
567.92

583

581

579

577

575

573

571

569

567

565

AP-4

GWC-8
565.70

HGWC-107
564.20

GWC-6
564.34

HGWC-105
564.19

GWC-4
566.94

HGWC-103
566.88

HGWC-102
564.51

HGWC-101
565.58

GWC-19
566.63

HGWC-118
565.57

HGWC-117
565.18

MW-12
564.73

Coosa River

N

LEGEND

- Compliance Monitoring Well
- Piezometer
- Groundwater Elevation Iso-Contour
- Approximate Groundwater Flow Direction
- Unnamed Creek
- Approximate AP-4 Boundary
- Plant Hammond Property Boundary

Notes:
1. Water level elevation recorded on August 24, 2020. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
2. The map shows only piezometers/wells installed and developed at the time of the gauging event.
3. Aerial photograph source: Google Earth Pro, August 2019.

0 150 300 600

SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOUR MAP - AUGUST 2020

GEORGIA POWER COMPANY
PLANT HAMMOND AP-4
FLOYD COUNTY, GEORGIA

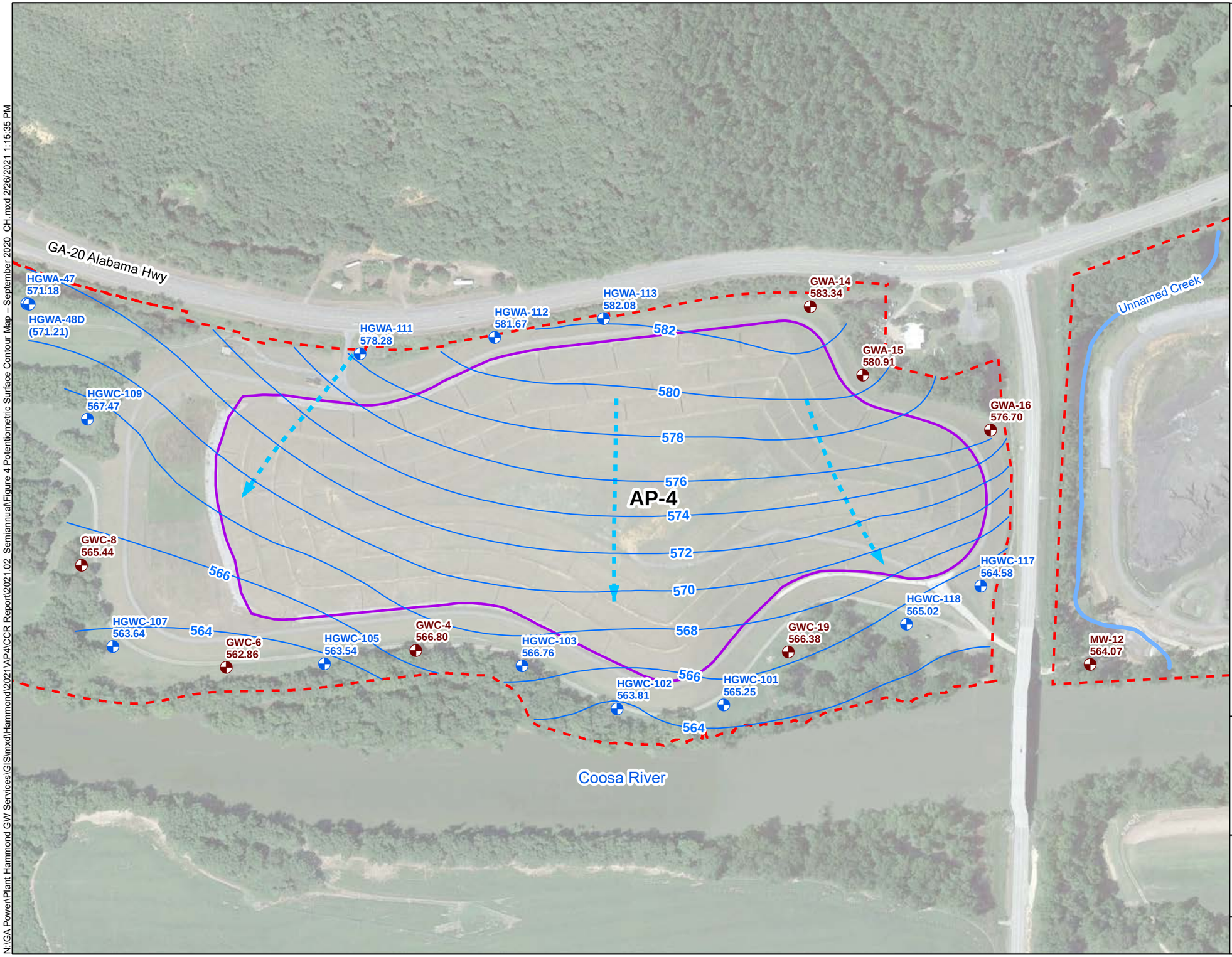
Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | FEBRUARY 2021

FIGURE 3

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2021\AP4\CCR Report\2021.02_Semiannual\Figure 4 Potentiometric Surface Contour Map – September 2020_CH.mxd 2/26/2021 1:15:35 PM



N

LEGEND

- Compliance Monitoring Well
- Piezometer
- Groundwater Elevation Iso-Contour
- Approximate Groundwater Flow Direction
- Unnamed Creek
- Approximate AP-4 Boundary
- Plant Hammond Property Boundary

Notes:
1. Water level elevations recorded on September 14, 2020. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
2. Water elevations in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
3. Aerial photograph source: Google Earth Pro, August 2019.

0 150 300 600

SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOUR MAP - SEPTEMBER 2020

GEORGIA POWER COMPANY
PLANT HAMMOND AP-4
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | FEBRUARY 2021

FIGURE 4

APPENDIX A

Well Design, Installation, and Development Report – Addendum , Plant Hammond Ash Pond 4 (AP-4), November 2020

Prepared for

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

WELL DESIGN, INSTALLATION, AND DEVELOPMENT REPORT - ADDENDUM

PLANT HAMMOND ASH POND 4 (AP-4)

Prepared by

Geosyntec consultants

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581B

November 2020

WELL DESIGN, INSTALLATION, AND DEVELOPMENT REPORT – ADDENDUM

Plant Hammond
Ash Pond 3
November 5, 2020

Whitney 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
GA EPD	Georgia Environmental Protection Division
Georgia Power	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 two groundwater monitoring wells to supplement the current groundwater monitoring system at Georgia Power Company (Georgia Power) Plant Hammond (Site) Ash Pond 4 (AP-4). The report was prepared as an addendum to previously submitted well design, installation, development and decommissioning reports issued for the Site (ERM, 2017), 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-4 includes 13 wells associated with the CCR compliance monitoring well network and a network of secondary groundwater monitoring wells and groundwater level monitoring 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 geologist under the supervision of a professional geologist (PG) registered to practice in the State of Georgia, 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.

This report presents the details for the installation and development for AP-4 area wells HGWA-47 and HGWA-48D. 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**.

2.1 Drilling Method

The boreholes were advanced using rotosonic drilling techniques with continuous core collection. A Terra Sonic Full-size drill rig with a 6-inch sonic drill rod was used to install the wells. 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. HGWA-47 is screened from approximately 547 to 537 feet, HGWA-48D is screened between approximately 518 to 508 feet (referenced to the North American Vertical Datum of 1988). Both 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. Since the two new wells were installed within 15 feet of each other, the bentonite seal at the deeper well HGWA-48D was also brought above the elevation corresponding to the screen top of nearby well HGWA-47. 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

Monitoring 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 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 new wells 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.

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-4, 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]
HGWA-47	Background	8/21/2020	1548990.96	1934171.84	577.39	580.33	546.84	536.84	40.80
HGWA-48D	Background	8/20/2020	1548989.39	1934178.15	577.29	580.26	517.54	507.54	70.00

Notes:

ft bgs = feet below ground surface.

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey was completed by GEL Solutions and certified September 10, 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. Survey was completed by GEL Solutions and certified September 10, 2020.

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

FIGURE

N

LEGEND

- Compliance Monitoring Well
- Piezometer

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

0 150 300 600

SCALE IN FEET

MONITORING WELL NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-4
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | NOVEMBER 2020

FIGURE 1

\\arc-01\pri1$\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\CCR Reports\AP-4\Figure 2_WellMap.mxd 9/18/2020 4:22:27 PM

APPENDIX A

Well Driller Performance Bonds

CONTINUATION CERTIFICATE

Atlantic Specialty Insurance Company , Surety upon

a certain Bond No. 800033976

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

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)

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 _____
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

S-0157/GE 8/08

XDP

APPENDIX B

Boring and Well Construction Logs

Geosyntec consultants
engineers | scientists | innovators

Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

HGWA-47

CLIENT Southern Company Services
PROJECT NAME Plant Hammond Well Installation
PROJECT NUMBER GW6581B
PROJECT LOCATION Plant Hammond
DATE STARTED 8/21/20 **COMPLETED** 8/21/20
NORTHING 1548990.96 ft **EASTING** 1934171.84 ft
DRILLER Cascade Drilling
GROUND ELEVATION 577.39 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 580.33 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY A. Ramsey **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	575			Hydro Excavation (0 ft to 10 ft) NO SAMPLE	Schedule 40 PVC 2"
5	570				
10	565			567.4 GRAVELLEY CLAY, Reddish yellow to Yellowish red, trace light gray mottling, angular to sub rounded gravel from 1/2 to 1 in diameter, gravel content decreases to moderate between 17 ft to 20 ft, low plasticity, some coal fragments throughout, trace brick fragments, hard, moist.	Aquaguard Sodium Bentonite Grout
15	560				
20	555			557.4 20 ft to 23 ft: No recovery. 554.4 SANDY CLAY, Reddish yellow to light brown, high plasticity, trace gravel, firm, wet.	
25	550			551.9 GRAVELLEY CLAY, Brown to light gray, some shale fragments and claystone gravel, hard, non plastic, dry to moist.	Bentonite coated 3/8" pellets
30	545			547.4 30 ft to 31 ft: No recovery. 546.4 CLAYSTONE, Gray, recovered as gravel and cobbles, with large calcite minerals, saturated from drill water, hard. 545.4 PARTIALLY WEATHERED ROCK, Light brown to gray, partially weathered, recovered as shaley clay, medium plasticity, soft to firm, wet.	20/40 Silica Sand
35	540				0.010 slot size 2" Pre Pack, U-Pack Screen
40				536.4 Bottom of borehole at 41.0 feet.	Bottom of well: 40.8 ft

SCS MONITORING WELLS PLANT HAMMOND HGWA7 TO HGWA114 AND MW46D_AUGUST 2020.GPJ ACP GINT LIBRARY CH.GLB 9/23/20

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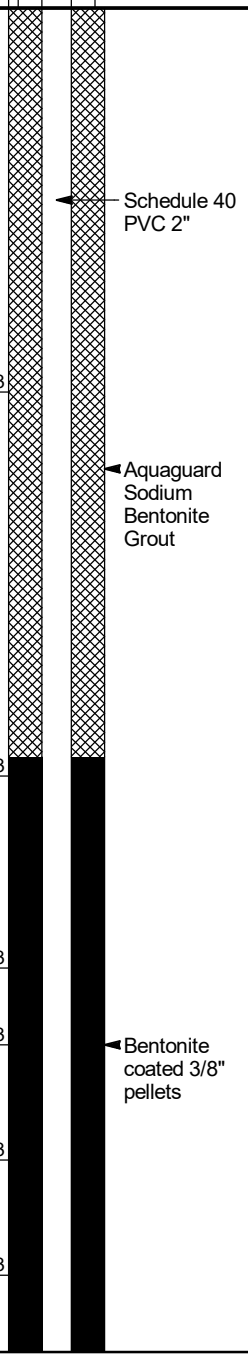
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

HGWA-48D

CLIENT Southern Company Services
PROJECT NAME Plant Hammond Well Installation
PROJECT NUMBER GW6581B
PROJECT LOCATION Plant Hammond
DATE STARTED 8/20/20 **COMPLETED** 8/20/20
NORTHING 1548989.39 ft **EASTING** 1934178.14 ft
DRILLER Cascade Drilling
GROUND ELEVATION 577.29 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 580.26 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY A. Ramsey **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	575			Hydro Excavation (0 ft to 10 ft) NO SAMPLE
5	570			
10	565			567.3 CLAY, Yellowish red with reddish yellow mottling, friable, non plastic to low plasticity, trace sand and rounded gravel, hard, dry to moist. 13 ft: Yellowish red with light gray mottling, some sub angular to sub round gravel, trace fine sand, very hard.
15	560			
20	555			557.3 18 ft: Trace gravel and sand. 20 ft to 25 ft: No recovery.
25	550			552.3 SANDY CLAY, Reddish yellow, medium plasticity, fine grained, very soft, wet. 550.3 GRAVELLEY CLAY, Reddish yellow to light brown, some sand, gravel up to 4 in diameter, non plastic to low plasticity, soft, wet to moist.
30	545			547.3 30 ft to 33 ft: No recovery. 544.3 PARTIALLY WEATHERED ROCK, Gray, dry to moist, firm to hard, non plastic, shale fragments, thinly bedded, few light gray gravel claystone.

CONSTRUCTION DIAGRAM



SCS MONITORING WELLS PLANT HAMMOND HGWA7 TO HGWA114 AND MW46D_AUGUST 2020.GPJ ACP GINT LIBRARY CH.GLB 9/23/20

(Continued Next Page)

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Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

HGWA-48D

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				PARTIALLY WEATHERED ROCK, Gray, dry to moist, firm to hard, non plastic, shale fragments, thinly bedded, few light gray gravel claystone. *(continued)*	
				540.8	
	540			SHALE, Light gray to brown, partially weathered, claystone gravel, medium to thin bedding, mostly pulverized by drilling, wet, some clay throughout.	Bentonite coated 3/8" pellets
40				537.3	
	535			SHALE, Light to dark gray with some light brown, mostly pulverized by drilling, thinly bedded massively, dry, 40 ft to 41 ft and 46 ft to 47 ft are wet due to drilling water, hard.	
45					
	530				
50				527.3	
	525			50 ft to 54 ft: No recovery.	
				523.3	
55				CLAYSTONE, Light gray to yellowish red, thinly to massively bedded, gravel to cobble sized fragments, hard, wet.	
				522.3	
	520			SHALE, Light gray, thinly bedded, partially pulverized, wet to saturated, fissile.	
				59 ft: Dry.	
60				517.3	20/40 Silica Sand
	515			60 ft to 63 ft: No recovery.	
				514.3	
65				SHALE, Light gray, thinly bedded to massive, gravel sized fragments, hard, wet.	0.010 slot size 2" Pre Pack, U-Pack Screen
	510				
70				69 ft: Dry.	Bottom of well: 70 ft
				507.3	

Bottom of borehole at 70.0 feet.

APPENDIX C

Well Development Forms

Geosyntec consultants

WELL DEVELOPMENT LOG SHEET

Client:	SCS/Georgia Power Company	Project No.:	GW6581B	Development Date:	8/30/20
Site:	Plant Hammond	Location:	AP-4	Field Personnel Name:	A. Ramsey
Well ID:	~~MW-47~~ HGWA-47	Pump Type/Model:	Mega Monsoon		
Total Depth (ft) (after purge):	43.74 ft bTOC	Tubing Material:	High Density Polyethylene (HDPE)		
Depth to Water (ft):	7.72 ft btoc	Pump Intake Depth (ft):	41 ft btoc		
Well Diameter (in):	2 in	Start/Stop Purge Time:	1128 / 1419		
Well Volume (gal) = $0.041 d^2 h$:	5.71 gal	Purge Rate (mL/min):	2333 ml/min		
Well Volume (L) = gal * 3.785:	21.63 L	Total Purge Volume (L):	119 L		

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

Well Type: Flush / **Stick Up** (circled)

Well Lock: **Yes** (circled) / No

Well Cap Condition: **Good** (circled) / Replace

Well Tag Present: **Yes** (circled) / No

*purged 14L from 1128 to 1334 2333 ml/min until clear + began readings

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.)
1334	7.17	3.7	23.6	–	34.6	overrange	8.22	2333	14	
1404	7.08	292.9	-166.9	–	19.2	11.1	8.38	2333	(70) 84	
1419	6.96	293.8	-177.7	-	19.1	7.13	8.32	2333	(35) 119	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

AR

DO probe failure

Geosyntec consultants

WELL DEVELOPMENT LOG SHEET

Client: SCS/Georgia Power Company
Site: Plant Hammond
Well ID: ~~MW-48D~~ HGWA-48D
Total Depth (ft) (after purge): 72.97 ft bTOC
Depth to Water (ft): 4.84 ft btoc
Well Diameter (in): 2 in
Well Volume (gal) = 0.041d^2h: 11.04 gal
Well Volume (L) = gal * 3.785: 41.79 L
d = well diameter (inches); h = length of water column (feet)

Project No.: GW6581B
Location: AP-4
Pump Type/Model: Mega Monsoon
Tubing Material: High Density Polyethylene (HDPE)
Pump Intake Depth (ft): 71 ft btoc
Start/Stop Purge Time: 1130/1323
Purge Rate (mL/min): 433 ml/min
Total Purge Volume (L): 49 L

Development Date: 8/30/20
Field Personnel Name: A. Ramsey

Well Type: Flush (Stick Up)
Well Lock: (Yes) No
Well Cap Condition: (Good) Replace
Well Tag Present: (Yes) No

* purged 7L from 1130 to 1138 @ 875 mL/min until clears began reading

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) total	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1138	7.42	345.8	98.6	–	20.9	62.2	19.13	875	7	
1153	7.016	326.9	69.5	–	20.6	33.0	25.50	467	(7) 14	
1208	7.02	321.5	46.9	–	20.6	26.9	31.59	467	(7) 14	
1223	6.96	313.3	-13.9	–	20.8	overrange	38.52	467	(7) 21	
1238	6.99	313.0	-37.0	–	21.1	85.2	~~8.88~~ 41.99	933	(14) 35	well surged
1308	7.02	316.0	-53.3	–	20.9	11.0	50.55	467	(7) 42	
1323	7.04	315.9	-63.5	–	21.2	6.36	50.24	467	(7) 49	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

DO probe failure

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-42D	1549363.7180	1938443.8590	586.17	1549362.3140	1938444.3210	583.39
HGWA-43D	1550422.8480	1940753.8050	595.08	1550422.8120	1940754.9980	592.08
HGWA-44D	1550409.1260	1940756.1850	594.79	1550409.2230	1940757.6150	592.01
HGWA-45D	1551157.6780	1941907.5370	586.95	1551159.2250	1941907.4670	584.08
MW-46D	1551056.4780	1942929.1010	605.72	1551055.9530	1942927.8210	603.17
HGWA-47	1548990.9600	1934171.8440	580.33	1548989.2780	1934171.6440	577.39
HGWA-48D	1548989.3900	1934178.1460	580.26	1548988.1150	1934177.8070	577.29

Benchmark	Northing	Easting	Elevation
BM H-1	1547964.9650	1937219.0690	579.02
BM H-2	1548149.4490	1938960.2220	590.68
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: 09/01/2020-09/02/2020. FIELD 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 BENCHMARKS BM H-1, BM-H2 & BM-H4 SET BY GEL SOLUTIONS DURING PREVIOUS SURVEYS USING A TRIMBLE DINI LEVEL

9/10/2020

APPENDIX B

Well Inspection Forms

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond APM
Permit Number:
Well ID: HGW A-C
Date, field conditions: 8/24/20 overcast 75°

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond AP-4
Permit Number:
Well ID: HGVA-111
Date, field conditions: Wet and Rain 8-25-2020

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond AP-4
Permit Number:
Well ID: H6VA-112
Date, field conditions: 8-25-2020 Wet

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond AP-4
Permit Number:
Well ID: H6VA-113
Date, field conditions: 8-25-2020 Wet

		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:
Standing water when conditions are Wet.

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: plant Hammond AP-4
Permit Number:
Well ID: HGWC-101
Date, field conditions: 8/27/2020 sunny, hot

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-4
Permit Number:
Well ID: HGWC 102
Date, field conditions: 8/27/20, clear, hot

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hummond AP-4
Permit Number:
Well ID: [redacted] MW-6 MW-3
Date, field conditions: 8/27/20, clear, hot

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond APH
Permit Number:
Well ID: HGWC-105
Date, field conditions: 2/27/2020 SUNNY

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-4
Permit Number:
Well ID: LIGWC - 107
Date, field conditions: overcast, hot 8/27/20

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?			✓
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond ADH
Permit Number:
Well ID: HGWC-109
Date, field conditions: 3/29/2020 sunny

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond APY
Permit Number:
Well ID: HGWC-117
Date, field conditions: 8/27/2020 sunny

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-4
Permit Number:
Well ID: HGWC-168
Date, field conditions: 8/26/2020, overcast, 80°F

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond Ash 4
Permit Number:
Well ID: CWC-4
Date, field conditions: 8/24/20 overcast 78°

		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:
Fire ants need to be ~~eradicated~~ taken care of

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP4
Permit Number:
Well ID: GWC-6
Date, field conditions: 8/24/20 overcast 75°

		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?	X		✓
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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP4
Permit Number:
Well ID: GWC-8
Date, field conditions: 8/24/20 overcast 75°

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP4
Permit Number:
Well ID: GWA-14
Date, field conditions: overcast 8/24/20 75°

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP4
Permit Number:
Well ID: GW A-15
Date, field conditions: 8/24/20 overcast

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: PL Hammond APH
Permit Number:
Well ID: GWA-16
Date, field conditions: 8/24/20, overcast 75°

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond APH
Permit Number:
Well ID: GWC - 19
Date, field conditions: 8/24/20 Overcast, 75°

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond AP4
Permit Number:
Well ID: MW-12
Date, field conditions: 8/24/20 overcast 75°

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: HAMMOND AD 4
Permit Number:
Well ID: ~~MW-47~~ LGWA-47
Date, field conditions: 78°F, SUNNY

		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?	~~✓~~	✓		NO ID ON EXTERNAL CASING
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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-4
Permit Number:
Well ID: ~~MW-48D~~ 1(GW A-48D)
Date, field conditions: 9/18/2020 80°F SUNDY

		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?		✓		being fixed
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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-4
Permit Number:
Well ID: HCeWA III
Date, field conditions: 9/18, sunny

		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: n/a

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-41
Permit Number:
Well ID: HGWA-112
Date, field conditions: 9/18 sunny

		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: N/a

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: HAMMOND APY
Permit Number:
Well ID: HGNA-113
Date, field conditions: 9-22-20, 65°F SUNNY

		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)?		✓		SOME 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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: HGWC-101 [illegible] AP4

Permit Number:

Well ID: HGWC-101

Date, field conditions: 60°F, Rainy

		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)?		✓	DEBRIS ON PAD
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:

Signature and Seal of PE/PG responsible for inspection

D

Groundwater Monitoring Well Integrity Form

Site Name: Drummond AP-4
Permit Number:
Well ID: HGWC 102
Date, field conditions: 10/9

		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:

Signature and Seal of PE/PG responsible for inspection

VT

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP4
Permit Number:
Well ID: HGWC-103
Date, field conditions: 9/24 cool Rainy

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP 4
Permit Number:
Well ID: HGWC-105
Date, field conditions: 9/24 cool Rainy

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name HANFORD APG
Permit Number
Well ID HGWC-107
Date, field conditions 65°F, rainy

		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)?		✓		DEBRIS ON THE VAD
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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond / AP4
Permit Number:
Well ID: HGWC-109
Date, field conditions: 9/25, overcast

		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:

n/a

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: HAMMOND AP-4
Permit Number:
Well ID: HGNL-117
Date, field conditions: 7-25-2020, 70°F OVERCAST

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Ironwood / AP4
Permit Number:
Well ID: HGWC-118
Date, field conditions: 9/28 sunny

		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: n/a

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-4
Permit Number:
Well ID: GWA-14
Date, field conditions: 9/14 sunny, warm

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP4
Permit Number:
Well ID: GWA-15
Date, field conditions: 8/24/20 overcast 75°

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-4
Permit Number:
Well ID: GWA-16
Date, field conditions: 9/24 sunny, warm

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-4
Permit Number:
Well ID: GeWC-4
Date, field conditions: 9/14 warm sunny

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

(17)

Site Name: Hammond AP-4
Permit Number:
Well ID: GWC-6
Date, field conditions: 9/14 warm, sunny

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

D

Site Name: Hammond AP-4
Permit Number:
Well ID: GWC-8
Date, field conditions: 9/14 sunny, warm

		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)	X		✓
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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-4
Permit Number:
Well ID: GWC-19
Date, field conditions: 9/14 sunny warm

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-2/APL1
Permit Number:
Well ID: MW-12
Date, field conditions: 9/14/2020 80°F Sunny

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP4
Permit Number:
Well ID: HGW.A-47
Date, field conditions: 11/10 cloudy, 70°

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond
Permit Number:
Well ID: HGWA-48D
Date, field conditions: Cloudy 11/11/2020

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
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)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
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)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
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 HP-4
Permit Number:
Well ID: HAW4-4SD
Date, field conditions: 12/15 Sunny, Cold

		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:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond AP 4
Permit Number:
Well ID: HGWA-47D
Date, field conditions: 12/15, Sunny, Cold

		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:

Signature and Seal of PE/PG responsible for inspection

APPENDIX C

Laboratory Analytical and Field Sampling Reports

LABORATORY ANALYTICAL RESULTS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

September 14, 2020

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

RE: Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

Pace Analytical Services Charlotte
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners
110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812
North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92487354001	**HGWC-102**	Water	07/21/20 15:17	07/22/20 11:41

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92487354001	**HGWC-102**	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	JRS	1
		EPA 300.0 Rev 2.1 1993	BRJ	3

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

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Peachtree Corners, GA 30092
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SUMMARY OF DETECTION

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92487354001	**HGWC-102**					
	pH	5.72	Std. Units		07/22/20 15:50	
EPA 6010D	Calcium	120	mg/L	1.0	07/28/20 16:18	M1
EPA 6020B	Arsenic	0.00083J	mg/L	0.0050	07/27/20 20:12	
EPA 6020B	Barium	0.028	mg/L	0.010	07/27/20 20:12	
EPA 6020B	Boron	3.0	mg/L	0.10	07/27/20 20:12	
EPA 6020B	Cadmium	0.00083J	mg/L	0.0025	07/27/20 20:12	
EPA 6020B	Cobalt	0.00098J	mg/L	0.0050	07/27/20 20:12	
EPA 6020B	Lithium	0.0013J	mg/L	0.030	07/27/20 20:12	
SM 2450C-2011	Total Dissolved Solids	669	mg/L	10.0	07/24/20 14:12	
EPA 300.0 Rev 2.1 1993	Chloride	7.2	mg/L	1.0	07/26/20 03:00	
EPA 300.0 Rev 2.1 1993	Sulfate	378	mg/L	8.0	07/26/20 08:12	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

Sample: HGWC-102 **Lab ID: 92487354001** Collected: 07/21/20 15:17 Received: 07/22/20 11:41 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**5.72**	Std. Units			1		07/22/20 15:50		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**120**	mg/L	1.0	0.070	1	07/24/20 14:29	07/28/20 16:18	7440-70-2	M1
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	07/23/20 14:15	07/27/20 20:12	7440-36-0	
Arsenic	**0.00083J**	mg/L	0.0050	0.00078	1	07/23/20 14:15	07/27/20 20:12	7440-38-2	
Barium	**0.028**	mg/L	0.010	0.00071	1	07/23/20 14:15	07/27/20 20:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	07/23/20 14:15	07/27/20 20:12	7440-41-7	
Boron	**3.0**	mg/L	0.10	0.0052	1	07/23/20 14:15	07/27/20 20:12	7440-42-8	
Cadmium	**0.00083J**	mg/L	0.0025	0.00012	1	07/23/20 14:15	07/27/20 20:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	07/23/20 14:15	07/27/20 20:12	7440-47-3	
Cobalt	**0.00098J**	mg/L	0.0050	0.00038	1	07/23/20 14:15	07/27/20 20:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	07/23/20 14:15	07/27/20 20:12	7439-92-1	
Lithium	**0.0013J**	mg/L	0.030	0.00081	1	07/23/20 14:15	07/27/20 20:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	07/23/20 14:15	07/27/20 20:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	07/23/20 14:15	07/27/20 20:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	07/23/20 14:15	07/27/20 20:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	07/23/20 08:00	07/23/20 14:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**669**	mg/L	10.0	10.0	1		07/24/20 14:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**7.2**	mg/L	1.0	0.60	1		07/26/20 03:00	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		07/26/20 03:00	16984-48-8	
Sulfate	**378**	mg/L	8.0	4.0	8		07/26/20 08:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

QC Batch: 555656
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92487354001

METHOD BLANK: 2950945 Matrix: Water
Associated Lab Samples: 92487354001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	07/28/20 15:56	

LABORATORY CONTROL SAMPLE: 2950946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.99J	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2950947 2950948

Parameter	Units	92487354001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	120	1	1	118	126	-236	541	75-125	6	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

QC Batch: 555325
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92487354001

METHOD BLANK: 2949548 Matrix: Water
Associated Lab Samples: 92487354001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	07/27/20 18:23	
Arsenic	mg/L	ND	0.0050	0.00078	07/27/20 18:23	
Barium	mg/L	ND	0.010	0.00071	07/27/20 18:23	
Beryllium	mg/L	ND	0.0030	0.000046	07/27/20 18:23	
Boron	mg/L	ND	0.10	0.0052	07/27/20 18:23	
Cadmium	mg/L	ND	0.0025	0.00012	07/27/20 18:23	
Chromium	mg/L	ND	0.010	0.00055	07/27/20 18:23	
Cobalt	mg/L	ND	0.0050	0.00038	07/27/20 18:23	
Lead	mg/L	ND	0.0050	0.000036	07/27/20 18:23	
Lithium	mg/L	ND	0.030	0.00081	07/27/20 18:23	
Molybdenum	mg/L	ND	0.010	0.00069	07/27/20 18:23	
Selenium	mg/L	ND	0.010	0.0016	07/27/20 18:23	
Thallium	mg/L	ND	0.0010	0.00014	07/27/20 18:23	

LABORATORY CONTROL SAMPLE: 2949549

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.092	92	80-120	
Arsenic	mg/L	0.1	0.093	93	80-120	
Barium	mg/L	0.1	0.091	91	80-120	
Beryllium	mg/L	0.1	0.090	90	80-120	
Boron	mg/L	1	0.92	92	80-120	
Cadmium	mg/L	0.1	0.093	93	80-120	
Chromium	mg/L	0.1	0.094	94	80-120	
Cobalt	mg/L	0.1	0.093	93	80-120	
Lead	mg/L	0.1	0.096	96	80-120	
Lithium	mg/L	0.1	0.091	91	80-120	
Molybdenum	mg/L	0.1	0.091	91	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2949550 2949551

Parameter	Units	92487388015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.093	0.095	92	95	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.097	0.097	96	96	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2949550 2949551

Parameter	Units	92487388015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.19	0.1	0.1	0.28	0.28	90	97	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.096	0.10	96	100	75-125	3	20	
Boron	mg/L	ND	1	1	0.97	1.0	96	102	75-125	6	20	
Cadmium	mg/L	ND	0.1	0.1	0.095	0.097	95	97	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.099	98	97	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.095	0.095	95	95	75-125	0	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.11	98	103	75-125	5	20	
Molybdenum	mg/L	ND	0.1	0.1	0.094	0.096	94	96	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.093	0.093	93	93	75-125	0	20	
Thallium	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

QC Batch: 555226
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92487354001

METHOD BLANK: 2949041 Matrix: Water
Associated Lab Samples: 92487354001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	07/23/20 14:00	

LABORATORY CONTROL SAMPLE: 2949042

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: 2949043 2949044

Parameter	Units	92487287001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0026	0.0025	103	99	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

QC Batch: 555676
QC Batch Method: SM 2450C-2011
Analysis Method: SM 2450C-2011
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92487354001

METHOD BLANK: 2951046 Matrix: Water
Associated Lab Samples: 92487354001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	07/24/20 14:07	

LABORATORY CONTROL SAMPLE: 2951047

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	413	103	84-108	

SAMPLE DUPLICATE: 2951048

Parameter	Units	92487411001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	73.0	75.0	3	10	

SAMPLE DUPLICATE: 2951049

Parameter	Units	92487420002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	100	110	10	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

QC Batch: 555626
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92487354001

METHOD BLANK: 2950807 Matrix: Water
Associated Lab Samples: 92487354001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	07/25/20 21:31	
Fluoride	mg/L	ND	0.10	0.050	07/25/20 21:31	
Sulfate	mg/L	ND	1.0	0.50	07/25/20 21:31	

LABORATORY CONTROL SAMPLE: 2950808

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.7	105	90-110	
Fluoride	mg/L	2.5	2.7	108	90-110	
Sulfate	mg/L	50	52.9	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2950809 2950810

Parameter	Units	92487589001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	61.5	50	50	100	103	77	83	90-110	3	10	M6
Fluoride	mg/L	1.2	2.5	2.5	3.8	3.8	105	106	90-110	0	10	
Sulfate	mg/L	573	50	50	618	635	91	125	90-110	3	10	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2950811 2950812

Parameter	Units	92487550002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	108	50	50	156	156	96	96	90-110	0	10	
Fluoride	mg/L	0.48	2.5	2.5	3.2	3.2	108	107	90-110	1	10	
Sulfate	mg/L	34.6	50	50	86.8	86.5	105	104	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 BACKGROUND
Pace Project No.: 92487354

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92487354001	**HGWC-102**				
92487354001	**HGWC-102**	EPA 3010A	555656	EPA 6010D	555730
92487354001	**HGWC-102**	EPA 3005A	555325	EPA 6020B	555361
92487354001	**HGWC-102**	EPA 7470A	555226	EPA 7470A	555285
92487354001	**HGWC-102**	SM 2450C-2011	555676		
92487354001	**HGWC-102**	EPA 300.0 Rev 2.1 1993	555626		

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

WO# : 92487354

92487354

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 ziploc

Thermometer Used THR230 Type of Ice: ☒ Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.5 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: KRW 7/22/20

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒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 ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7. 10 Day
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked	☒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 ☐No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒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)

F-ALLC003rev.3, 11September2006

Pace Analytical	Document Name: Bottle Identification Form (BIF)	Document Issued: March 14, 2019 Page 1 of 1
	Document No.: F-CAR-CS-043-Rev.00	Issuing Authority: Pace Carolinas Quality Office

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

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

••Bottom half of box is to list number of bottle

Project # **WO#: 92487354**

PM: KLH1 Due Date: 08/05/20

CLIENT: GA-GA Power

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

Out of hold, incorrect preservative, out of temp, incorrect containers

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information

Company	GA Power
Address	Atlanta, GA
Email To	SCS Contacts
Phone	Fax
Requested Due Date/TAT:	10 Day

Section B Required Project Information

Report To	SCS Contacts
Copy To	Geosyntec Contacts
Purchase Order No.	
Project Name	Plant Hammond AP-4 Background
Project Number	GW6581

Section C Invoice Information

Attention	Southern Co
Company Name	
Address	
Pace Quote Reference	
Pace Project Manager	Kevin Herring
Pace Profile #	2912-10

REGULATORY AGENCY: NPDES / GROUND WATER / DRINKING WATER / UST / RCRA ✓ / OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW, WATER WT, WASTE WATER WW, PRODUCT P, SOIL/SOLID SL, OIL OL, WIPE WP, AIR AR, OTHER OT, TISSUE TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Chloride, Fluoride, Sulfate (N)	TDS (N)	Metals 6010/6020* (N)	RAD 226/228 (N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92487354
1	HGWC-102	WT	G	7/21	1517	—	—	22	5	2		3						X	X	X	X	N	pH = 5.72 last sample
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

CR 7/21/2020

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.	Chad Russo / GEOS	7/21/20	1725	Madia M[illegible] / Geo	7/21/20	1735				
	Madia M[illegible] / Geosyntec	7/22/20	1140	[illegible] / Pace	7-22-20	1141				
*Metals: Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	[illegible] / Pace	7-22-20	1450	K. Wellington / Pace	7/22/20	1450	25	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo

DATE Signed (MM/DD/YY): 7/21/2020

*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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

August 12, 2020

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

RE: Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92487351001	**HGWC-102**	Water	07/21/20 15:17	07/22/20 11:41

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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92487351001	**HGWC-102**	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92487351001	**HGWC-102**					
EPA 9315	Radium-226	0.0938 ± 0.128 (0.271) C:96% T:NA	pCi/L		08/03/20 07:11	
EPA 9320	Radium-228	-0.119 ± 0.345 (0.823) C:77% T:86%	pCi/L		08/07/20 12:13	
Total Radium Calculation	Total Radium	0.0938 ± 0.473 (1.09)	pCi/L		08/11/20 13:19	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

Sample: HGWC-102 **Lab ID: 92487351001** Collected: 07/21/20 15:17 Received: 07/22/20 11:41 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	**0.0938 ± 0.128 (0.271) C:96% T:NA**	pCi/L	08/03/20 07:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.119 ± 0.345 (0.823) C:77% T:86%**	pCi/L	08/07/20 12:13	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.0938 ± 0.473 (1.09)**	pCi/L	08/11/20 13:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

QC Batch: 407104
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92487351001

METHOD BLANK: 1970100 Matrix: Water
Associated Lab Samples: 92487351001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.00350 ± 0.0895 (0.259) C:99% T:NA	pCi/L	08/03/20 07:11	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

QC Batch: 407458
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92487351001

METHOD BLANK: 1971639 Matrix: Water
Associated Lab Samples: 92487351001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.631U ± 0.411 (0.776) C:75% T:78%	pCi/L	08/07/20 12:07	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 BACKGROUND RADS
Pace Project No.: 92487351

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92487351001	**HGWC-102**	EPA 9315	407104		
92487351001	**HGWC-102**	EPA 9320	407458		
92487351001	**HGWC-102**	Total Radium Calculation	408885		

Pace Analytical

Sample Condition Upon Rece

Client Name: GA Power

WO# : 92487351

92487351

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Othe

Tracking #: _____

Proj. Due Date:
Proj. Name:

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

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other ziploc

Thermometer Used THR230 Type of Ice: ☑ Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.5 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KRW 7/22/20

Comments:

Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑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	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7. 10 Day
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT				
All containers needing preservation have been checked	☑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	☐No		Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑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)

F-ALLC003rev.3, 11September2006

Pace Analytical	Document Name: Bottle Identification Form (BIF)	Document Issued: March 14, 2019 Page 1 of 1
	Document No.: F-CAR-CS-043-Rev.00	Issuing Authority: Pace Carolinas Quality Office

Project # **WO#: 92487351**

PM: KLH1 Due Date: 08/12/20

CLIENT: GA-GA Power

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

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

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

Out of hold, incorrect preservative, out of temp, incorrect containers.

PaceAnalytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information

Company	GA Power
Address	Atlanta, GA
Email To	SCS Contacts
Phone	Fax
Requested Due Date/TAT:	10 Day

Section B Required Project Information

Report To	SCS Contacts
Copy To	Geosyntec Contacts
Purchase Order No	
Project Name	Plant Hammond AP-4 Background
Project Number	GW6581

Section C Invoice Information

Attention	Southern Co.
Company Name	
Address	
Pace Quote Reference	
Pace Project Manager	Kevin Herring
Pace Profile #	2912-10

REGULATORY AGENCY

NPDES | GROUND WATER | DRINKING WATER | UST | RCRA | OTHER ~~CCR~~ (checked)

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

Requested Analysis Filtered (Y/N): N N N N

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Chloride, Fluoride, Sulfate	TDS	Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92487351
1	HGWC-102	WT	G	7/21	1517	—	—	22	5	2		3						X	X	X	X	N	pH = 5.72 last sample
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

CR 7/21/2020

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Chad Russo / GEO	7/21/20	1725	Madia Marks / Geo	7/21/20	1725				
	Madia Marks / Geosyntec	7/22/20	1140	[illegible] / Pace	7-22-20	1141				
*Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	[illegible] / Pace	7-22-20	1450	K. Willingham / Pace	7/22/20	1450	2.5	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo

DATE Signed (MM/DD/YY): 7/21/2020

*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

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-226
Analyst:	JJY
Date:	7/31/2020
Worklist:	55323
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1970100
MB concentration:	-0.004
M/B Counting Uncertainty:	0.089
MB MDC:	0.259
MB Numerical Performance Indicator:	-0.08
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS55323	LCSD55323
Count Date:	8/3/2020	8/3/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.046	24.046
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.513	0.510
Target Conc. (pCi/L, g, F):	4.684	4.717
Uncertainty (Calculated):	0.056	0.057
Result (pCi/L, g, F):	4.653	5.001
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.619	0.647
Numerical Performance Indicator:	-0.10	0.86
Percent Recovery:	99.34%	106.02%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS55323	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD55323	
Sample Result (pCi/L, g, F):	4.653	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.619	
Sample Duplicate Result (pCi/L, g, F):	5.001	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.647	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.762	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	6.51%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

VAM 8/3/2020

JM 8/3/20

Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Test: Ra-228
Analyst: VAL
Date: 8/5/2020
Worklist: 55375
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1971639
MB concentration:	0.631
MB 2 Sigma CSU:	0.411
MB MDC:	0.776
MB Numerical Performance Indicator:	3.01
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS55375	LCSD55375
Count Date:	8/7/2020	
Spike I.D.:	20-030	
Decay Corrected Spike Concentration (pCi/mL):	38.893	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.814	
Target Conc. (pCi/L, g, F):	4.776	
Uncertainty (Calculated):	0.234	
Result (pCi/L, g, F):	6.088	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.376	
Numerical Performance Indicator:	1.84	
Percent Recovery:	127.48%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	6/24/2020	6/23/2020
Sample I.D.	20160199009	20159953007
Sample MS I.D.	20160199015	20159953011
Sample MSD I.D.	20160199016	20159953012
Spike I.D.:	20-030	20-030
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	39.462	39.462
Spike Volume Used in MS (mL):	0.20	0.20
Spike Volume Used in MSD (mL):	0.20	0.20
MS Aliquot (L, g, F):	0.801	0.814
MS Target Conc.(pCi/L, g, F):	9.855	9.691
MSD Aliquot (L, g, F):	0.809	0.806
MSD Target Conc. (pCi/L, g, F):	9.758	9.797
MS Spike Uncertainty (calculated):	0.483	0.475
MSD Spike Uncertainty (calculated):	0.478	0.480
Sample Result:	0.342	0.387
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.416	0.421
Sample Matrix Spike Result:	8.737	10.335
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.783	2.118
Sample Matrix Spike Duplicate Result:	8.964	7.692
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.817	1.599
MS Numerical Performance Indicator:	-1.511	0.228
MSD Numerical Performance Indicator:	-1.157	-2.837
MS Percent Recovery:	85.19%	102.65%
MSD Percent Recovery:	88.36%	74.56%
MS Status vs Numerical Indicator:	Pass	Pass
MSD Status vs Numerical Indicator:	Pass	Warning
MS Status vs Recovery:	Pass	Pass
MSD Status vs Recovery:	Pass	Pass
MS/MSD Upper % Recovery Limits:	135%	135%
MS/MSD Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	20160199009	20159953007
Sample MS I.D.	20160199015	20159953011
Sample MSD I.D.	20160199016	20159953012
Sample Matrix Spike Result:	8.737	10.335
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.783	2.118
Sample Matrix Spike Duplicate Result:	8.964	7.692
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.817	1.599
Duplicate Numerical Performance Indicator:	-0.175	1.952
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	3.65%	31.70%
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	Pass
MS/ MSD Duplicate Status vs RPD:	Pass	Pass
% RPD Limit:	36%	36%

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.~~

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

September 08, 2020

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

RE: Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between August 26, 2020 and August 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

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

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

Sincerely,

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

Enclosures

cc: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Pace Analytical Services Charlotte
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners
110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812
North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92492563001	**HGWA-111**	Water	08/25/20 10:03	08/26/20 12:00
92492563002	**HGWA-112**	Water	08/25/20 12:10	08/26/20 12:00
92492563003	**HGWA-113**	Water	08/25/20 15:17	08/26/20 12:00
92492563004	**HGWC-118**	Water	08/26/20 15:36	08/27/20 08:56
92492563005	**HGWC-102**	Water	08/27/20 15:45	08/28/20 11:08
92492563006	**FB-02**	Water	08/27/20 15:30	08/28/20 11:08
92492563007	**FD-02**	Water	08/27/20 00:00	08/28/20 11:08
92492563008	**HGWC-101**	Water	08/27/20 11:30	08/28/20 11:08
92492563009	**HGWC-103**	Water	08/27/20 13:40	08/28/20 11:08
92492563010	**HGWC-107**	Water	08/27/20 17:30	08/28/20 11:08
92492563011	**HGWC-105**	Water	08/27/20 13:43	08/28/20 11:08
92492563012	**HGWC-109**	Water	08/27/20 15:42	08/28/20 11:08
92492563013	**HGWC-117**	Water	08/27/20 17:48	08/28/20 11:08

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92492563001	**HGWA-111**	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492563002	**HGWA-112**	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492563003	**HGWA-113**	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492563004	**HGWC-118**	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	CDC	1
92492563005	**HGWC-102**	EPA 6020B	CW1	14
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92492563006	**FB-02**	EPA 6020B	CW1	14
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92492563007	**FD-02**	EPA 6020B	CW1	14
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92492563008	**HGWC-101**	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492563009	**HGWC-103**	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492563010	**HGWC-107**	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492563011	**HGWC-105**	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492563012	**HGWC-109**	EPA 6020B	CW1	12

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492563013	**HGWC-117**	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492563001	**HGWA-111**					
	pH	6.70	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.031	mg/L	0.010	08/28/20 17:23	
EPA 6020B	Beryllium	0.000047J	mg/L	0.0030	08/28/20 17:23	
EPA 6020B	Chromium	0.0013J	mg/L	0.010	08/28/20 17:23	
EPA 6020B	Lead	0.00036J	mg/L	0.0050	08/28/20 17:23	
EPA 6020B	Lithium	0.0033J	mg/L	0.030	08/28/20 17:23	
EPA 300.0 Rev 2.1 1993	Fluoride	0.052J	mg/L	0.10	08/27/20 17:56	
92492563002	**HGWA-112**					
	pH	5.53	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.028	mg/L	0.010	08/28/20 17:29	
EPA 6020B	Chromium	0.0039J	mg/L	0.010	08/28/20 17:29	
EPA 6020B	Lead	0.00011J	mg/L	0.0050	08/28/20 17:29	
92492563003	**HGWA-113**					
	pH	5.95	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.030	mg/L	0.010	08/28/20 17:35	
EPA 6020B	Beryllium	0.000046J	mg/L	0.0030	08/28/20 17:35	
EPA 6020B	Chromium	0.0031J	mg/L	0.010	08/28/20 17:35	
EPA 6020B	Lead	0.00022J	mg/L	0.0050	08/28/20 17:35	
EPA 6020B	Lithium	0.0014J	mg/L	0.030	08/28/20 17:35	
EPA 300.0 Rev 2.1 1993	Fluoride	0.17	mg/L	0.10	08/27/20 18:26	
92492563004	**HGWC-118**					
	pH	6.97	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.056	mg/L	0.010	09/02/20 11:41	
EPA 6020B	Chromium	0.00098J	mg/L	0.010	09/02/20 11:41	
EPA 6020B	Cobalt	0.00061J	mg/L	0.0050	09/02/20 11:41	
EPA 6020B	Lead	0.00036J	mg/L	0.0050	09/02/20 11:41	
EPA 6020B	Lithium	0.0028J	mg/L	0.030	09/02/20 11:41	
EPA 300.0 Rev 2.1 1993	Fluoride	0.072J	mg/L	0.10	08/29/20 01:38	
92492563005	**HGWC-102**					
	pH	5.7	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.028	mg/L	0.010	09/01/20 20:50	
EPA 6020B	Boron	2.7	mg/L	0.10	09/01/20 20:50	
EPA 6020B	Cadmium	0.00038J	mg/L	0.0025	09/01/20 20:50	
EPA 6020B	Calcium	106	mg/L	0.10	09/02/20 18:01	
EPA 6020B	Cobalt	0.0010J	mg/L	0.0050	09/01/20 20:50	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	09/01/20 20:50	
SM 2450C-2011	Total Dissolved Solids	663	mg/L	10.0	08/31/20 18:03	
EPA 300.0 Rev 2.1 1993	Chloride	7.1	mg/L	1.0	08/29/20 20:56	
EPA 300.0 Rev 2.1 1993	Sulfate	382	mg/L	1.0	08/29/20 20:56	
92492563006	**FB-02**					
EPA 6020B	Barium	0.0020J	mg/L	0.010	09/01/20 20:56	
EPA 6020B	Boron	0.013J	mg/L	0.10	09/01/20 20:56	
92492563007	**FD-02**					
EPA 6020B	Barium	0.027	mg/L	0.010	09/01/20 21:02	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492563007	**FD-02**					
EPA 6020B	Boron	2.8	mg/L	0.10	09/01/20 21:02	
EPA 6020B	Cadmium	0.00034J	mg/L	0.0025	09/01/20 21:02	
EPA 6020B	Calcium	105	mg/L	0.10	09/01/20 21:02	
EPA 6020B	Cobalt	0.0011J	mg/L	0.0050	09/01/20 21:02	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	09/01/20 21:02	
SM 2450C-2011	Total Dissolved Solids	661	mg/L	10.0	08/31/20 18:04	
EPA 300.0 Rev 2.1 1993	Chloride	7.0	mg/L	1.0	08/29/20 21:26	
EPA 300.0 Rev 2.1 1993	Sulfate	381	mg/L	1.0	08/29/20 21:26	
92492563008	**HGWC-101**					
	pH	5.32	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.045	mg/L	0.010	09/02/20 11:52	
EPA 6020B	Beryllium	0.000057J	mg/L	0.0030	09/02/20 11:52	
EPA 6020B	Cadmium	0.00019J	mg/L	0.0025	09/02/20 11:52	
EPA 6020B	Cobalt	0.0027J	mg/L	0.0050	09/02/20 11:52	
92492563009	**HGWC-103**					
	pH	5.82	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.038	mg/L	0.010	09/02/20 11:58	
EPA 6020B	Beryllium	0.000050J	mg/L	0.0030	09/02/20 11:58	
EPA 6020B	Cadmium	0.00082J	mg/L	0.0025	09/02/20 11:58	
EPA 6020B	Chromium	0.00069J	mg/L	0.010	09/02/20 11:58	
EPA 6020B	Cobalt	0.0019J	mg/L	0.0050	09/02/20 11:58	
EPA 6020B	Lead	0.00018J	mg/L	0.0050	09/02/20 11:58	
EPA 6020B	Lithium	0.0016J	mg/L	0.030	09/02/20 11:58	
92492563010	**HGWC-107**					
	pH	6.09	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.034	mg/L	0.010	09/01/20 21:19	
92492563011	**HGWC-105**					
	pH	6.45	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.068	mg/L	0.010	09/01/20 21:36	
EPA 6020B	Lithium	0.0037J	mg/L	0.030	09/01/20 21:36	
92492563012	**HGWC-109**					
	pH	6.64	Std. Units		09/01/20 07:51	
EPA 6020B	Arsenic	0.0011J	mg/L	0.0050	09/01/20 21:42	
EPA 6020B	Barium	0.083	mg/L	0.010	09/01/20 21:42	
EPA 6020B	Cobalt	0.00086J	mg/L	0.0050	09/01/20 21:42	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	09/01/20 21:42	
EPA 300.0 Rev 2.1 1993	Fluoride	0.094J	mg/L	0.10	08/30/20 00:09	
92492563013	**HGWC-117**					
	pH	5.92	Std. Units		09/01/20 07:51	
EPA 6020B	Barium	0.047	mg/L	0.010	09/01/20 21:47	
EPA 6020B	Beryllium	0.000049J	mg/L	0.0030	09/02/20 18:36	
EPA 6020B	Cadmium	0.00080J	mg/L	0.0025	09/01/20 21:47	
EPA 6020B	Chromium	0.00057J	mg/L	0.010	09/01/20 21:47	
EPA 6020B	Cobalt	0.011	mg/L	0.0050	09/01/20 21:47	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492563013	**HGWC-117**					
EPA 6020B	Lead	0.00014J	mg/L	0.0050	09/01/20 21:47	
EPA 6020B	Lithium	0.0024J	mg/L	0.030	09/01/20 21:47	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWA-111 **Lab ID: 92492563001** Collected: 08/25/20 10:03 Received: 08/26/20 12:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**6.70**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	08/27/20 17:10	08/28/20 17:23	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/27/20 17:10	08/28/20 17:23	7440-38-2	
Barium	**0.031**	mg/L	0.010	0.00071	1	08/27/20 17:10	08/28/20 17:23	7440-39-3	
Beryllium	**0.000047J**	mg/L	0.0030	0.000046	1	08/27/20 17:10	08/28/20 17:23	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/27/20 17:10	08/28/20 17:23	7440-43-9	
Chromium	**0.0013J**	mg/L	0.010	0.00055	1	08/27/20 17:10	08/28/20 17:23	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/27/20 17:10	08/28/20 17:23	7440-48-4	
Lead	**0.00036J**	mg/L	0.0050	0.000036	1	08/27/20 17:10	08/28/20 17:23	7439-92-1	
Lithium	**0.0033J**	mg/L	0.030	0.00081	1	08/27/20 17:10	08/28/20 17:23	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/27/20 17:10	08/28/20 17:23	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/27/20 17:10	08/28/20 17:23	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/27/20 17:10	08/28/20 17:23	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:23	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	**0.052J**	mg/L	0.10	0.050	1		08/27/20 17:56	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWA-112 **Lab ID: 92492563002** Collected: 08/25/20 12:10 Received: 08/26/20 12:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**5.53**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	08/27/20 17:10	08/28/20 17:29	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/27/20 17:10	08/28/20 17:29	7440-38-2	
Barium	**0.028**	mg/L	0.010	0.00071	1	08/27/20 17:10	08/28/20 17:29	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/27/20 17:10	08/28/20 17:29	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/27/20 17:10	08/28/20 17:29	7440-43-9	
Chromium	**0.0039J**	mg/L	0.010	0.00055	1	08/27/20 17:10	08/28/20 17:29	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/27/20 17:10	08/28/20 17:29	7440-48-4	
Lead	**0.00011J**	mg/L	0.0050	0.000036	1	08/27/20 17:10	08/28/20 17:29	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/27/20 17:10	08/28/20 17:29	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/27/20 17:10	08/28/20 17:29	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/27/20 17:10	08/28/20 17:29	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/27/20 17:10	08/28/20 17:29	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:32	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	ND	mg/L	0.10	0.050	1		08/27/20 18:11	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWA-113 **Lab ID: 92492563003** Collected: 08/25/20 15:17 Received: 08/26/20 12:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**5.95**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	08/27/20 17:10	08/28/20 17:35	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/27/20 17:10	08/28/20 17:35	7440-38-2	
Barium	**0.030**	mg/L	0.010	0.00071	1	08/27/20 17:10	08/28/20 17:35	7440-39-3	
Beryllium	**0.000046J**	mg/L	0.0030	0.000046	1	08/27/20 17:10	08/28/20 17:35	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/27/20 17:10	08/28/20 17:35	7440-43-9	
Chromium	**0.0031J**	mg/L	0.010	0.00055	1	08/27/20 17:10	08/28/20 17:35	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/27/20 17:10	08/28/20 17:35	7440-48-4	
Lead	**0.00022J**	mg/L	0.0050	0.000036	1	08/27/20 17:10	08/28/20 17:35	7439-92-1	
Lithium	**0.0014J**	mg/L	0.030	0.00081	1	08/27/20 17:10	08/28/20 17:35	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/27/20 17:10	08/28/20 17:35	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/27/20 17:10	08/28/20 17:35	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/27/20 17:10	08/28/20 17:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:35	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	**0.17**	mg/L	0.10	0.050	1		08/27/20 18:26	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWC-118 **Lab ID: 92492563004** Collected: 08/26/20 15:36 Received: 08/27/20 08:56 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**6.97**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/02/20 11:41	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/02/20 11:41	7440-38-2	
Barium	**0.056**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/02/20 11:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 11:41	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/02/20 11:41	7440-43-9	
Chromium	**0.00098J**	mg/L	0.010	0.00055	1	09/01/20 14:03	09/02/20 11:41	7440-47-3	
Cobalt	**0.00061J**	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/02/20 11:41	7440-48-4	
Lead	**0.00036J**	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/02/20 11:41	7439-92-1	
Lithium	**0.0028J**	mg/L	0.030	0.00081	1	09/01/20 14:03	09/02/20 11:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/02/20 11:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/02/20 11:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/02/20 11:41	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:37	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	**0.072J**	mg/L	0.10	0.050	1		08/29/20 01:38	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWC-102 **Lab ID: 92492563005** Collected: 08/27/20 15:45 Received: 08/28/20 11:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**5.7**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 20:50	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 20:50	7440-38-2	
Barium	**0.028**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 20:50	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 18:01	7440-41-7	
Boron	**2.7**	mg/L	0.10	0.0052	1	09/01/20 14:03	09/01/20 20:50	7440-42-8	
Cadmium	**0.00038J**	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 20:50	7440-43-9	
Calcium	**106**	mg/L	0.10	0.021	1	09/01/20 14:03	09/02/20 18:01	7440-70-2	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 20:50	7440-47-3	
Cobalt	**0.0010J**	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 20:50	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 20:50	7439-92-1	
Lithium	**0.0011J**	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 20:50	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 20:50	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 20:50	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 20:50	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**663**	mg/L	10.0	10.0	1		08/31/20 18:03		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**7.1**	mg/L	1.0	0.60	1		08/29/20 20:56	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 20:56	16984-48-8	
Sulfate	**382**	mg/L	1.0	0.50	1		08/29/20 20:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: FB-02 **Lab ID: 92492563006** Collected: 08/27/20 15:30 Received: 08/28/20 11:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 20:56	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 20:56	7440-38-2	
Barium	**0.0020J**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 20:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 18:07	7440-41-7	
Boron	**0.013J**	mg/L	0.10	0.0052	1	09/01/20 14:03	09/01/20 20:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 20:56	7440-43-9	
Calcium	ND	mg/L	0.10	0.021	1	09/01/20 14:03	09/01/20 20:56	7440-70-2	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 20:56	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 20:56	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 20:56	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 20:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 20:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 20:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 20:56	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:47	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		08/31/20 18:04		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		08/29/20 21:11	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 21:11	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		08/29/20 21:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: FD-02 **Lab ID: 92492563007** Collected: 08/27/20 00:00 Received: 08/28/20 11:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 21:02	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 21:02	7440-38-2	
Barium	**0.027**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 21:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 18:13	7440-41-7	
Boron	**2.8**	mg/L	0.10	0.0052	1	09/01/20 14:03	09/01/20 21:02	7440-42-8	
Cadmium	**0.00034J**	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 21:02	7440-43-9	
Calcium	**105**	mg/L	0.10	0.021	1	09/01/20 14:03	09/01/20 21:02	7440-70-2	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 21:02	7440-47-3	
Cobalt	**0.0011J**	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 21:02	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 21:02	7439-92-1	
Lithium	**0.0011J**	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 21:02	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 21:02	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 21:02	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 21:02	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:49	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**661**	mg/L	10.0	10.0	1		08/31/20 18:04		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**7.0**	mg/L	1.0	0.60	1		08/29/20 21:26	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 21:26	16984-48-8	
Sulfate	**381**	mg/L	1.0	0.50	1		08/29/20 21:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWC-101 **Lab ID: 92492563008** Collected: 08/27/20 11:30 Received: 08/28/20 11:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**5.32**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/02/20 11:52	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/02/20 11:52	7440-38-2	
Barium	**0.045**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/02/20 11:52	7440-39-3	
Beryllium	**0.000057J**	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 11:52	7440-41-7	
Cadmium	**0.00019J**	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/02/20 11:52	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/02/20 11:52	7440-47-3	
Cobalt	**0.0027J**	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/02/20 11:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/02/20 11:52	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/01/20 14:03	09/02/20 11:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/02/20 11:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/02/20 11:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/02/20 11:52	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:51	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 21:40	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWC-103 **Lab ID: 92492563009** Collected: 08/27/20 13:40 Received: 08/28/20 11:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**5.82**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/02/20 11:58	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/02/20 11:58	7440-38-2	
Barium	**0.038**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/02/20 11:58	7440-39-3	
Beryllium	**0.000050J**	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 11:58	7440-41-7	
Cadmium	**0.00082J**	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/02/20 11:58	7440-43-9	
Chromium	**0.00069J**	mg/L	0.010	0.00055	1	09/01/20 14:03	09/02/20 11:58	7440-47-3	
Cobalt	**0.0019J**	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/02/20 11:58	7440-48-4	
Lead	**0.00018J**	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/02/20 11:58	7439-92-1	
Lithium	**0.0016J**	mg/L	0.030	0.00081	1	09/01/20 14:03	09/02/20 11:58	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/02/20 11:58	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/02/20 11:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/02/20 11:58	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:54	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 22:25	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWC-107 **Lab ID: 92492563010** Collected: 08/27/20 17:30 Received: 08/28/20 11:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**6.09**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 21:19	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 21:19	7440-38-2	
Barium	**0.034**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 21:19	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 18:18	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 21:19	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 21:19	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 21:19	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 21:19	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 21:19	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 21:19	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 21:19	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 21:19	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:56	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 23:40	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWC-105 **Lab ID: 92492563011** Collected: 08/27/20 13:43 Received: 08/28/20 11:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**6.45**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 21:36	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 21:36	7440-38-2	
Barium	**0.068**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 21:36	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 18:24	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 21:36	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 21:36	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 21:36	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 21:36	7439-92-1	
Lithium	**0.0037J**	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 21:36	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 21:36	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 21:36	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 21:36	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 09:59	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 23:55	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWC-109 **Lab ID: 92492563012** Collected: 08/27/20 15:42 Received: 08/28/20 11:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**6.64**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 21:42	7440-36-0	
Arsenic	**0.0011J**	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 21:42	7440-38-2	
Barium	**0.083**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 21:42	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 18:30	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 21:42	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 21:42	7440-47-3	
Cobalt	**0.00086J**	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 21:42	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 21:42	7439-92-1	
Lithium	**0.0011J**	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 21:42	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 21:42	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 21:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 21:42	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 10:01	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	**0.094J**	mg/L	0.10	0.050	1		08/30/20 00:09	16984-48-8	

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(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Sample: HGWC-117 **Lab ID: 92492563013** Collected: 08/27/20 17:48 Received: 08/28/20 11:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**5.92**	Std. Units			1		09/01/20 07:51		
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 21:47	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 21:47	7440-38-2	
Barium	**0.047**	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 21:47	7440-39-3	
Beryllium	**0.000049J**	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 18:36	7440-41-7	
Cadmium	**0.00080J**	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 21:47	7440-43-9	
Chromium	**0.00057J**	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 21:47	7440-47-3	
Cobalt	**0.011**	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 21:47	7440-48-4	
Lead	**0.00014J**	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 21:47	7439-92-1	
Lithium	**0.0024J**	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 21:47	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 21:47	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 21:47	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 21:47	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 10:03	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Fluoride	ND	mg/L	0.10	0.050	1		08/30/20 00:24	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

QC Batch: 562831
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92492563001, 92492563002, 92492563003

METHOD BLANK: 2984655 Matrix: Water
Associated Lab Samples: 92492563001, 92492563002, 92492563003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/28/20 15:42	
Arsenic	mg/L	ND	0.0050	0.00078	08/28/20 15:42	
Barium	mg/L	ND	0.010	0.00071	08/28/20 15:42	
Beryllium	mg/L	ND	0.0030	0.000046	08/28/20 15:42	
Cadmium	mg/L	ND	0.0025	0.00012	08/28/20 15:42	
Chromium	mg/L	ND	0.010	0.00055	08/28/20 15:42	
Cobalt	mg/L	ND	0.0050	0.00038	08/28/20 15:42	
Lead	mg/L	ND	0.0050	0.000036	08/28/20 15:42	
Lithium	mg/L	ND	0.030	0.00081	08/28/20 15:42	
Molybdenum	mg/L	ND	0.010	0.00069	08/28/20 15:42	
Selenium	mg/L	ND	0.010	0.0016	08/28/20 15:42	
Thallium	mg/L	ND	0.0010	0.00014	08/28/20 15:42	

LABORATORY CONTROL SAMPLE: 2984656

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.095	95	80-120	
Arsenic	mg/L	0.1	0.094	94	80-120	
Barium	mg/L	0.1	0.093	93	80-120	
Beryllium	mg/L	0.1	0.096	96	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.097	97	80-120	
Cobalt	mg/L	0.1	0.095	95	80-120	
Lead	mg/L	0.1	0.089	89	80-120	
Lithium	mg/L	0.1	0.094	94	80-120	
Molybdenum	mg/L	0.1	0.094	94	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.089	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2984657 2984658

Parameter	Units	92491917001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.094	0.094	94	94	75-125	0	20	
Barium	mg/L	0.030	0.1	0.1	0.12	0.12	94	89	75-125	4	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.096	98	96	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2984657 2984658

Parameter	Units	92491917001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	3	20	
Chromium	mg/L	0.00063J	0.1	0.1	0.098	0.095	98	94	75-125	4	20	
Cobalt	mg/L	0.0039J	0.1	0.1	0.10	0.098	96	94	75-125	3	20	
Lead	mg/L	ND	0.1	0.1	0.090	0.088	90	88	75-125	2	20	
Lithium	mg/L	ND	0.1	0.1	0.098	0.096	97	96	75-125	2	20	
Molybdenum	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.093	0.093	93	93	75-125	1	20	
Thallium	mg/L	ND	0.1	0.1	0.090	0.089	90	89	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

QC Batch: 563747
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92492563004, 92492563005, 92492563006, 92492563007, 92492563008, 92492563009, 92492563010, 92492563011, 92492563012, 92492563013

METHOD BLANK: 2988642 Matrix: Water
Associated Lab Samples: 92492563004, 92492563005, 92492563006, 92492563007, 92492563008, 92492563009, 92492563010, 92492563011, 92492563012, 92492563013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/01/20 19:19	
Arsenic	mg/L	ND	0.0050	0.00078	09/01/20 19:19	
Barium	mg/L	ND	0.010	0.00071	09/01/20 19:19	
Beryllium	mg/L	ND	0.0030	0.000046	09/02/20 16:41	
Boron	mg/L	ND	0.10	0.0052	09/01/20 19:19	
Cadmium	mg/L	ND	0.0025	0.00012	09/01/20 19:19	
Chromium	mg/L	ND	0.010	0.00055	09/01/20 19:19	
Cobalt	mg/L	ND	0.0050	0.00038	09/01/20 19:19	
Lead	mg/L	ND	0.0050	0.000036	09/01/20 19:19	
Lithium	mg/L	ND	0.030	0.00081	09/01/20 19:19	
Molybdenum	mg/L	ND	0.010	0.00069	09/01/20 19:19	
Selenium	mg/L	ND	0.010	0.0016	09/01/20 19:19	
Thallium	mg/L	ND	0.0010	0.00014	09/01/20 19:19	

LABORATORY CONTROL SAMPLE: 2988643

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	101	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.092	92	80-120	
Boron	mg/L	1	0.93	93	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.096	96	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.092	92	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988644 2988645

Parameter	Units	92492563004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.095	100	95	75-125	5	20	

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

REPORT OF LABORATORY ANALYSIS

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110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988644 2988645

Parameter	Units	92492563004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	0.1	0.1	0.10	0.093	99	92	75-125	7	20	
Barium	mg/L	0.056	0.1	0.1	0.15	0.15	93	90	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.091	0.089	91	89	75-125	2	20	
Boron	mg/L	0.69	1	1	1.6	1.6	88	91	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.097	0.094	97	94	75-125	3	20	
Chromium	mg/L	0.00098J	0.1	0.1	0.098	0.10	97	100	75-125	3	20	
Cobalt	mg/L	0.00061J	0.1	0.1	0.097	0.098	97	97	75-125	1	20	
Lead	mg/L	0.00036J	0.1	0.1	0.094	0.095	94	95	75-125	1	20	
Lithium	mg/L	0.0028J	0.1	0.1	0.092	0.091	89	88	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.093	98	92	75-125	7	20	
Thallium	mg/L	ND	0.1	0.1	0.093	0.095	93	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

QC Batch: 563370 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92492563001, 92492563002, 92492563003, 92492563004, 92492563005, 92492563006, 92492563007, 92492563008, 92492563009, 92492563010, 92492563011, 92492563012, 92492563013

METHOD BLANK: 2987104 Matrix: Water
Associated Lab Samples: 92492563001, 92492563002, 92492563003, 92492563004, 92492563005, 92492563006, 92492563007, 92492563008, 92492563009, 92492563010, 92492563011, 92492563012, 92492563013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.00011J	0.00050	0.000078	09/01/20 09:18	

LABORATORY CONTROL SAMPLE: 2987105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987106 2987107

Parameter	Units	92492563001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0024	93	94	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

QC Batch: 563552 | 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: 92492563005, 92492563006, 92492563007

METHOD BLANK: 2988051 Matrix: Water
Associated Lab Samples: 92492563005, 92492563006, 92492563007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	08/31/20 17:59	

LABORATORY CONTROL SAMPLE: 2988052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	397	99	84-108	

SAMPLE DUPLICATE: 2988053

Parameter	Units	92492424001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	246	252	2	10	

SAMPLE DUPLICATE: 2988054

Parameter	Units	92492418006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

QC Batch: 562698
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92492563001, 92492563002, 92492563003

METHOD BLANK: 2984151 Matrix: Water
Associated Lab Samples: 92492563001, 92492563002, 92492563003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/27/20 13:21	

LABORATORY CONTROL SAMPLE: 2984152

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2984153 2984154

Parameter	Units	92492398001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.1	2.1	82	84	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2984155 2984156

Parameter	Units	92492228018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	105	107	90-110	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

QC Batch: 563042
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92492563004

METHOD BLANK: 2985604 Matrix: Water
Associated Lab Samples: 92492563004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/28/20 19:55	

LABORATORY CONTROL SAMPLE: 2985605

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2985606 2985607

Parameter	Units	92492821006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.062J	2.5	2.5	2.7	2.7	105	106	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2985608 2985609

Parameter	Units	92492821016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.14	2.5	2.5	2.8	2.8	106	106	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

QC Batch: 563290
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92492563005, 92492563006, 92492563007, 92492563008

METHOD BLANK: 2986801 Matrix: Water
Associated Lab Samples: 92492563005, 92492563006, 92492563007, 92492563008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/29/20 14:28	
Fluoride	mg/L	ND	0.10	0.050	08/29/20 14:28	
Sulfate	mg/L	ND	1.0	0.50	08/29/20 14:28	

LABORATORY CONTROL SAMPLE: 2986802

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.5	105	90-110	
Fluoride	mg/L	2.5	2.6	105	90-110	
Sulfate	mg/L	50	52.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986803 2986804

Parameter	Units	92493054001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.1	50	50	53.3	54.4	104	107	90-110	2	10	
Fluoride	mg/L	0.14	2.5	2.5	2.8	2.8	105	106	90-110	1	10	
Sulfate	mg/L	10.6	50	50	63.2	64.2	105	107	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986805 2986806

Parameter	Units	92492705017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	25.2	50	50	77.7	78.4	105	106	90-110	1	10	
Fluoride	mg/L	0.15	2.5	2.5	2.8	2.8	105	107	90-110	1	10	
Sulfate	mg/L	1350	50	50	1380	1420	62	151	90-110	3	10	M6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

QC Batch: 563291
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92492563009, 92492563010, 92492563011, 92492563012, 92492563013

METHOD BLANK: 2986807 Matrix: Water
Associated Lab Samples: 92492563009, 92492563010, 92492563011, 92492563012, 92492563013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/29/20 21:55	

LABORATORY CONTROL SAMPLE: 2986808

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986809 2986810

Parameter	Units	92492563009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	103	105	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986811 2986812

Parameter	Units	92493068007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	95	97	90-110	2	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92492563001	**HGWA-111**				
92492563002	**HGWA-112**				
92492563003	**HGWA-113**				
92492563004	**HGWC-118**				
92492563005	**HGWC-102**				
92492563008	**HGWC-101**				
92492563009	**HGWC-103**				
92492563010	**HGWC-107**				
92492563011	**HGWC-105**				
92492563012	**HGWC-109**				
92492563013	**HGWC-117**				
92492563001	**HGWA-111**	EPA 3005A	562831	EPA 6020B	562944
92492563002	**HGWA-112**	EPA 3005A	562831	EPA 6020B	562944
92492563003	**HGWA-113**	EPA 3005A	562831	EPA 6020B	562944
92492563004	**HGWC-118**	EPA 3005A	563747	EPA 6020B	563831
92492563005	**HGWC-102**	EPA 3005A	563747	EPA 6020B	563831
92492563006	**FB-02**	EPA 3005A	563747	EPA 6020B	563831
92492563007	**FD-02**	EPA 3005A	563747	EPA 6020B	563831
92492563008	**HGWC-101**	EPA 3005A	563747	EPA 6020B	563831
92492563009	**HGWC-103**	EPA 3005A	563747	EPA 6020B	563831
92492563010	**HGWC-107**	EPA 3005A	563747	EPA 6020B	563831
92492563011	**HGWC-105**	EPA 3005A	563747	EPA 6020B	563831
92492563012	**HGWC-109**	EPA 3005A	563747	EPA 6020B	563831
92492563013	**HGWC-117**	EPA 3005A	563747	EPA 6020B	563831
92492563001	**HGWA-111**	EPA 7470A	563370	EPA 7470A	563482
92492563002	**HGWA-112**	EPA 7470A	563370	EPA 7470A	563482
92492563003	**HGWA-113**	EPA 7470A	563370	EPA 7470A	563482
92492563004	**HGWC-118**	EPA 7470A	563370	EPA 7470A	563482
92492563005	**HGWC-102**	EPA 7470A	563370	EPA 7470A	563482
92492563006	**FB-02**	EPA 7470A	563370	EPA 7470A	563482
92492563007	**FD-02**	EPA 7470A	563370	EPA 7470A	563482
92492563008	**HGWC-101**	EPA 7470A	563370	EPA 7470A	563482
92492563009	**HGWC-103**	EPA 7470A	563370	EPA 7470A	563482
92492563010	**HGWC-107**	EPA 7470A	563370	EPA 7470A	563482
92492563011	**HGWC-105**	EPA 7470A	563370	EPA 7470A	563482
92492563012	**HGWC-109**	EPA 7470A	563370	EPA 7470A	563482
92492563013	**HGWC-117**	EPA 7470A	563370	EPA 7470A	563482
92492563005	**HGWC-102**	SM 2450C-2011	563552		
92492563006	**FB-02**	SM 2450C-2011	563552		
92492563007	**FD-02**	SM 2450C-2011	563552		
92492563001	**HGWA-111**	EPA 300.0 Rev 2.1 1993	562698		
92492563002	**HGWA-112**	EPA 300.0 Rev 2.1 1993	562698		
92492563003	**HGWA-113**	EPA 300.0 Rev 2.1 1993	562698		
92492563004	**HGWC-118**	EPA 300.0 Rev 2.1 1993	563042		
92492563005	**HGWC-102**	EPA 300.0 Rev 2.1 1993	563290		

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SCAN/BKG 07
Pace Project No.: 92492563

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92492563006	**FB-02**	EPA 300.0 Rev 2.1 1993	563290		
92492563007	**FD-02**	EPA 300.0 Rev 2.1 1993	563290		
92492563008	**HGWC-101**	EPA 300.0 Rev 2.1 1993	563290		
92492563009	**HGWC-103**	EPA 300.0 Rev 2.1 1993	563291		
92492563010	**HGWC-107**	EPA 300.0 Rev 2.1 1993	563291		
92492563011	**HGWC-105**	EPA 300.0 Rev 2.1 1993	563291		
92492563012	**HGWC-109**	EPA 300.0 Rev 2.1 1993	563291		
92492563013	**HGWC-117**	EPA 300.0 Rev 2.1 1993	563291		

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

WO#: 92492563

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

Cooler Temperature 4.6 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/26/2004

Temp should be above freezing to 6°C Comments:

Chain of Custody Present:	☒Yes	☐No	☐N/A
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A
Sufficient Volume:	☒Yes	☐No	☐N/A
Correct Containers Used:	☒Yes	☐No	☐N/A
-Pace Containers Used:	☒Yes	☐No	☐N/A
Containers Intact:	☒Yes	☐No	☐N/A
Filtered volume received for Dissolved tests	☐Yes	☐No	☒N/A
Sample Labels match COC:	☒Yes	☐No	☐N/A
-Includes date/time/ID/Analysis Matrix: W			
All containers needing preservation have been checked.	☒Yes	☐No	☐N/A
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	☒No	
Samples checked for dechlorination:	☐Yes	☐No	☒N/A
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A
Trip Blank Present:	☐Yes	☐No	☒N/A
Trip Blank Custody Seals Present	☐Yes	☐No	☒N/A
Pace Trip Blank Lot # (if purchased):			

Comments:	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
Initial when completed	Lot # of added preservative
14.	
15.	
16.	

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)

F-ALLC003rev.3, 11September2006

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Scan/BKG 07
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (use valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Fluoride	App IV Metals 6020/7470*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N		92492567
1	HGWA-111	WT	G			–	–		4	1		3							X	X	X	N	pH = 6.70
2	HGWA-112	WT	G			–	–		4	1		3							X	X	X	N	pH = 5.53
3	HGWA-113	WT	G			–	–		4	1		3							X	X	X	N	pH = 5.95
4	~~HGWC-104~~	WT	G						4	1		3							X	X	X	N	pH =
5	~~HGWC-105~~	WT	G			–	–		4	1		3							X	X	X	N	pH =
6	~~HGWC-106~~	WT	G			–	–		4	1		3							X	X	X	N	pH =
7	~~HGWC-107~~	WT	G			–	–		4	1		3							X	X	X	N	pH =
8	~~HGWC-108~~	WT	G			–	–		4	1		3							X	X	X	N	pH =
9	~~HGWC-117~~	WT	G			–	–		4	1		3							X	X	X	N	pH =
10	~~HGWC-118~~	WT	G			–	–		4	1		3							X	X	X	N	pH =
11				AR	8-25-2020																			
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Sampler	8-25	1830	Nadia Mostafa/Geosyntec	8/25	1830				
	Nadia Mostafa/Geosyntec	8/26	0949		8/26	9:52				
*App. IV Metals=Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl					8/26/20	1200	4.6	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Reeder

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 08/25/2020

*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.

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Scan/BKG 07
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Fluoride N; App IV Metals 6020/7470* N; RAD 226/228 N

Pace Project No./ Lab I.D.: 92492563

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Fluoride	App IV Metals 6020/7470*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~HGWA-111~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
2	~~HGWA-112~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
3	~~HGWA-113~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
4	~~HGWC-101~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
5	~~HGWC-103~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
6	HGWC-105	WT	G			–	–		4	1		3						X	X	X	N	pH =
7	~~HGWC-107~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
8	~~HGWC-109~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
9	~~HGWC-117~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
10	HGWC-118	WT	G	8/26	1536	–	–	20	4	1		3						X	X	X	N	pH = 6.97 004
11																						
12																						

CR 8/26/2020

ADDITIONAL COMMENTS

Please note dry wells, strike thorough any wells not sampled, and note when the last sample for the event has been taken.

*App. IV Metals=Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Chad Russo / GCO	8/26/20	1740	[signature]	8-26-20	1740				
[signature]	8/27/20	0805	[signature] / Geosyntec	8/27/20	0805				
[signature] / Geosyntec	8/27/20	0826	[signature] / Pace	8/27/20	0856				
[signature] / Pace	8/27/20	1246	K. [signature] / PACE	8/27/20	1240	4.1	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo DATE Signed (MM/DD/YY): 8/26/2020

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 late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 3

Section A
Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B
Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Scan/BKG 07
Project Number:	GW6581

Section C
Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D
Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate (N)	TDS (N)	App. III & IV Metals 6010/6020/7470 (N)	RAD 226/228 (N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92492563
1	HGWC-102	WT	G	08/27	15:45	–	–	23	5	2		3							X	X	X	X	N	pH = 5.7 005
2	FB-02	WT	G	08/27	18:30	–	–		5	2		3							X	X	X	X	N	006
3	FD-02	WT	G	08/27	[illegible]	–	–		5	2		3							X	X	X	X	N	007
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS

Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.

App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Thomas Koesler / geo	8/27	1900	[illegible] / geo	8/27	1900
[illegible] / geo	8/27	2005	Nolia Mushin / Geosyntec	8/27/20	2005
Nolia Mushin / Geosyntec	8/28/20	11:05	[illegible] / Pace	8/28/20	1105
[illegible] / Pace	8/28/20	4:10	[illegible]	8/28/20	1610

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas Koesler

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 08/27/2020

*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

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Pace Analytical

Page: 2 of 3

Section A Required Client Information:

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Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

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Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Scan/BKG 07
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Fluoride N; App IV Metals 6020/7470* N; RAD 226/228 N

Pace Project No./Lab I.D.: 92492563

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Fluoride	App IV Metals 6020/7470*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./Lab I.D.
1	~~HGWA-111~~	WT	G						4	1		3						X	X	X	N	pH =
2	~~HGWA-112~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
3	~~HGWA-113~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
4	HGWC-101	WT	G	8/27	11:30	–	–	25	4	1		3						X	X	X	N	pH = 5.32 008
5	HGWC-103	WT	G	8/27	13:46	–	–	20	4	1		3						X	X	X	N	pH = 5.92 009
6	~~HGWC-105~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
7	HGWC-107	WT	G	8/27	17:30	–	–	21	4	1		3						X	X	X	N	pH = 6.09 010
8	~~HGWC-109~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
9	~~HGWC-117~~	WT	G						4	1		3						X	X	X	N	pH =
10	~~HGWC-118~~	WT	G						4	1		3						X	X	X	N	pH =
11																						
12																						

ADDITIONAL COMMENTS

Please note dry wells, strike thorough any wells not sampled, and note when the last sample for the event has been taken.

*App. IV Metals=Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Thomas Kessler / Geo	08/27	19:00	[signature] / Geo	8/27	1900
[signature]	8/27	2005	Nadia Munhar / Geosyntec	8/27/20	2005
Nadia Munhar / Geosyntec	8/28/20	11:05	[signature] / Pace	8/28/20	1108
[signature] / Pace	8/28/20	4:10	[signature]	8/28/20	[illegible]

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas Kessler

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 08/27/2020

*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

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 3 of 3

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

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Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Scan/BKG 07
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (Use valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: Y/N	Fluoride	App IV Metals 6020/7470*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N		92442563
1	~~HGWA-111~~	WT	G			--			4	1		3							X	X	X	N	pH =
2	HGWA-112	WT	G			--	--		4	1		3							X	X	X	N	pH =
3	~~HGWA-113~~	WT	G			--			4	1		3							X	X	X	N	pH =
4	~~HGWC-101~~	WT	G			--	--		4	1		3							X	X	X	N	pH =
5	~~HGWC-103~~	WT	G			--			4	1		3							X	X	X	N	pH =
6	HGWC-105	WT	G	8/27	1343	--	--	20	4	1		3							X	X	X	N	pH = 6.45 011
7	~~HGWC-107~~	WT	G			--	--		4	1		3							X	X	X	N	pH =
8	HGWC-109	WT	G	8/27	1532	--	--	20	4	1		3							X	X	X	N	pH = 6.64 012
9	HGWC-117	WT	G	8/27	1748	--	--	20	4	1		3							X	X	X	N	pH = 5.92 last sample 013
10	~~HGWC-118~~	WT	G			--	--		4	1		3							X	X	X	N	pH =
11									(CH)														
12									8/27/2020														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Chad Russo / SCS	8/27/20	2005	Natalia Martinez / Geosyntec	8/27/20	2005
	Natalia Martinez / Geosyntec	8/28/20	11:05	/ Pace	8/28/20	1109
*App. IV Metals=Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	/ Pace	8/28/20	4:10	Chandler Fowler	8/28/20	1610

SAMPLE CONDITIONS			
Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.4	Y	N	X

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo

DATE Signed (MM/DD/YY): 8/27/2020

*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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

September 17, 2020

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

RE: Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between August 26, 2020 and August 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

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

Enclosures

cc: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92492559001	**HGWA-111**	Water	08/25/20 10:03	08/26/20 12:00
92492559002	**HGWA-112**	Water	08/25/20 12:10	08/26/20 12:00
92492559003	**HGWA-113**	Water	08/25/20 15:17	08/26/20 12:00
92492559004	**HGWC-118**	Water	08/26/20 15:36	08/27/20 08:56
92492559005	**HGWC-102**	Water	08/27/20 15:45	08/28/20 11:08
92492559006	**FB-02**	Water	08/27/20 15:30	08/28/20 11:08
92492559007	**FD-02**	Water	08/27/20 00:00	08/28/20 11:08
92492559008	**HGWC-101**	Water	08/27/20 11:30	08/28/20 11:08
92492559009	**HGWC-103**	Water	08/27/20 13:40	08/28/20 11:08
92492559010	**HGWC-107**	Water	08/27/20 17:30	08/28/20 11:08
92492559011	**HGWC-105**	Water	08/27/20 13:43	08/28/20 11:08
92492559012	**HGWC-109**	Water	08/27/20 15:42	08/28/20 11:08
92492559013	**HGWC-117**	Water	08/27/20 17:48	08/28/20 11:08

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92492559001	**HGWA-111**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492559002	**HGWA-112**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492559003	**HGWA-113**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492559004	**HGWC-118**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492559005	**HGWC-102**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92492559006	**FB-02**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92492559007	**FD-02**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92492559008	**HGWC-101**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92492559009	**HGWC-103**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92492559010	**HGWC-107**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92492559011	**HGWC-105**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92492559012	**HGWC-109**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92492559013	**HGWC-117**	EPA 9315	LAL	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492559001	**HGWA-111**					
EPA 9315	Radium-226	0.176 ± 0.181 (0.352) C:76% T:NA	pCi/L		09/14/20 07:16	
EPA 9320	Radium-228	0.394 ± 0.467 (0.986) C:61% T:80%	pCi/L		09/16/20 11:38	
Total Radium Calculation	Total Radium	0.570 ± 0.648 (1.34)	pCi/L		09/17/20 11:22	
92492559002	**HGWA-112**					
EPA 9315	Radium-226	0.0182 ± 0.161 (0.413) C:90% T:NA	pCi/L		09/14/20 07:29	
EPA 9320	Radium-228	-0.0563 ± 0.427 (1.00) C:57% T:85%	pCi/L		09/16/20 11:38	
Total Radium Calculation	Total Radium	0.0182 ± 0.588 (1.41)	pCi/L		09/17/20 11:22	
92492559003	**HGWA-113**					
EPA 9315	Radium-226	0.0907 ± 0.175 (0.402) C:85% T:NA	pCi/L		09/14/20 07:11	
EPA 9320	Radium-228	0.496 ± 0.459 (0.934) C:60% T:77%	pCi/L		09/16/20 11:38	
Total Radium Calculation	Total Radium	0.587 ± 0.634 (1.34)	pCi/L		09/17/20 11:22	
92492559004	**HGWC-118**					
EPA 9315	Radium-226	0.255 ± 0.180 (0.285) C:91% T:NA	pCi/L		09/14/20 09:01	
EPA 9320	Radium-228	0.932 ± 0.483 (0.833) C:62% T:82%	pCi/L		09/16/20 14:42	
Total Radium Calculation	Total Radium	1.19 ± 0.663 (1.12)	pCi/L		09/17/20 11:22	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492559005	**HGWC-102**					
EPA 9315	Radium-226	0.322 ± 0.237 (0.373) C:91% T:NA	pCi/L		09/10/20 07:36	
EPA 9320	Radium-228	0.844 ± 0.455 (0.815) C:71% T:89%	pCi/L		09/15/20 14:40	
Total Radium Calculation	Total Radium	1.17 ± 0.692 (1.19)	pCi/L		09/16/20 10:12	
92492559006	**FB-02**					
EPA 9315	Radium-226	0.288 ± 0.144 (0.222) C:76% T:NA	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	0.0979 ± 0.352 (0.800) C:66% T:84%	pCi/L		09/15/20 15:02	
Total Radium Calculation	Total Radium	0.386 ± 0.496 (1.02)	pCi/L		09/16/20 10:12	
92492559007	**FD-02**					
EPA 9315	Radium-226	0.269 ± 0.124 (0.182) C:88% T:NA	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	-0.0608 ± 0.360 (0.855) C:68% T:84%	pCi/L		09/15/20 15:02	
Total Radium Calculation	Total Radium	0.269 ± 0.484 (1.04)	pCi/L		09/16/20 10:12	
92492559008	**HGWC-101**					
EPA 9315	Radium-226	0.109 ± 0.105 (0.191) C:82% T:NA	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	-0.00868 ± 0.404 (0.939) C:66% T:83%	pCi/L		09/15/20 15:02	
Total Radium Calculation	Total Radium	0.109 ± 0.509 (1.13)	pCi/L		09/16/20 10:12	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492559009	**HGWC-103**					
EPA 9315	Radium-226	0.109 ± 0.0888 (0.154) C:95% T:NA	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	0.261 ± 0.415 (0.900) C:68% T:84%	pCi/L		09/15/20 15:02	
Total Radium Calculation	Total Radium	0.370 ± 0.504 (1.05)	pCi/L		09/16/20 10:12	
92492559010	**HGWC-107**					
EPA 9315	Radium-226	0.264 ± 0.119 (0.171) C:88% T:NA	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	-0.415 ± 0.432 (1.09) C:61% T:79%	pCi/L		09/15/20 15:02	
Total Radium Calculation	Total Radium	0.264 ± 0.551 (1.26)	pCi/L		09/16/20 10:12	
92492559011	**HGWC-105**					
EPA 9315	Radium-226	0.300 ± 0.162 (0.268) C:85% T:NA	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	0.116 ± 0.373 (0.843) C:66% T:83%	pCi/L		09/15/20 15:03	
Total Radium Calculation	Total Radium	0.416 ± 0.535 (1.11)	pCi/L		09/16/20 10:12	
92492559012	**HGWC-109**					
EPA 9315	Radium-226	0.278 ± 0.129 (0.191) C:88% T:NA	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	0.711 ± 0.468 (0.897) C:70% T:85%	pCi/L		09/15/20 15:05	
Total Radium Calculation	Total Radium	0.989 ± 0.597 (1.09)	pCi/L		09/16/20 10:12	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492559013	**HGWC-117**					
EPA 9315	Radium-226	0.193 ± 0.107 (0.167) C:87% T:NA	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	-0.131 ± 0.403 (0.963) C:64% T:85%	pCi/L		09/15/20 15:05	
Total Radium Calculation	Total Radium	0.193 ± 0.510 (1.13)	pCi/L		09/16/20 10:12	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWA-111 **Lab ID: 92492559001** Collected: 08/25/20 10:03 Received: 08/26/20 12:00 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	**0.176 ± 0.181 (0.352) C:76% T:NA**	pCi/L	09/14/20 07:16	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.394 ± 0.467 (0.986) C:61% T:80%**	pCi/L	09/16/20 11:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.570 ± 0.648 (1.34)**	pCi/L	09/17/20 11:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWA-112 **Lab ID: 92492559002** Collected: 08/25/20 12:10 Received: 08/26/20 12:00 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	**0.0182 ± 0.161 (0.413) C:90% T:NA**	pCi/L	09/14/20 07:29	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.0563 ± 0.427 (1.00) C:57% T:85%**	pCi/L	09/16/20 11:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.0182 ± 0.588 (1.41)**	pCi/L	09/17/20 11:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWA-113 **Lab ID: 92492559003** Collected: 08/25/20 15:17 Received: 08/26/20 12:00 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	**0.0907 ± 0.175 (0.402) C:85% T:NA**	pCi/L	09/14/20 07:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.496 ± 0.459 (0.934) C:60% T:77%**	pCi/L	09/16/20 11:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.587 ± 0.634 (1.34)**	pCi/L	09/17/20 11:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWC-118 **Lab ID: 92492559004** Collected: 08/26/20 15:36 Received: 08/27/20 08:56 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.255 ± 0.180 (0.285) C:91% T:NA**	pCi/L	09/14/20 09:01	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.932 ± 0.483 (0.833) C:62% T:82%**	pCi/L	09/16/20 14:42	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.19 ± 0.663 (1.12)**	pCi/L	09/17/20 11:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWC-102 **Lab ID: 92492559005** Collected: 08/27/20 15:45 Received: 08/28/20 11:08 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	**0.322 ± 0.237 (0.373) C:91% T:NA**	pCi/L	09/10/20 07:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.844 ± 0.455 (0.815) C:71% T:89%**	pCi/L	09/15/20 14:40	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.17 ± 0.692 (1.19)**	pCi/L	09/16/20 10:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: FB-02 **Lab ID: 92492559006** Collected: 08/27/20 15:30 Received: 08/28/20 11:08 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	**0.288 ± 0.144 (0.222) C:76% T:NA**	pCi/L	09/10/20 19:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.0979 ± 0.352 (0.800) C:66% T:84%**	pCi/L	09/15/20 15:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.386 ± 0.496 (1.02)**	pCi/L	09/16/20 10:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: FD-02 **Lab ID: 92492559007** Collected: 08/27/20 00:00 Received: 08/28/20 11:08 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	**0.269 ± 0.124 (0.182) C:88% T:NA**	pCi/L	09/10/20 19:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.0608 ± 0.360 (0.855) C:68% T:84%**	pCi/L	09/15/20 15:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.269 ± 0.484 (1.04)**	pCi/L	09/16/20 10:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWC-101 **Lab ID: 92492559008** Collected: 08/27/20 11:30 Received: 08/28/20 11:08 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	**0.109 ± 0.105 (0.191) C:82% T:NA**	pCi/L	09/10/20 19:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.00868 ± 0.404 (0.939) C:66% T:83%**	pCi/L	09/15/20 15:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.109 ± 0.509 (1.13)**	pCi/L	09/16/20 10:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWC-103 **Lab ID: 92492559009** Collected: 08/27/20 13:40 Received: 08/28/20 11:08 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	**0.109 ± 0.0888 (0.154) C:95% T:NA**	pCi/L	09/10/20 19:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.261 ± 0.415 (0.900) C:68% T:84%**	pCi/L	09/15/20 15:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.370 ± 0.504 (1.05)**	pCi/L	09/16/20 10:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWC-107 **Lab ID: 92492559010** Collected: 08/27/20 17:30 Received: 08/28/20 11:08 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	**0.264 ± 0.119 (0.171) C:88% T:NA**	pCi/L	09/10/20 19:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.415 ± 0.432 (1.09) C:61% T:79%**	pCi/L	09/15/20 15:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.264 ± 0.551 (1.26)**	pCi/L	09/16/20 10:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWC-105 **Lab ID: 92492559011** Collected: 08/27/20 13:43 Received: 08/28/20 11:08 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	**0.300 ± 0.162 (0.268) C:85% T:NA**	pCi/L	09/10/20 19:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.116 ± 0.373 (0.843) C:66% T:83%**	pCi/L	09/15/20 15:03	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.416 ± 0.535 (1.11)**	pCi/L	09/16/20 10:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWC-109 **Lab ID: 92492559012** Collected: 08/27/20 15:42 Received: 08/28/20 11:08 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	**0.278 ± 0.129 (0.191) C:88% T:NA**	pCi/L	09/10/20 19:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.711 ± 0.468 (0.897) C:70% T:85%**	pCi/L	09/15/20 15:05	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.989 ± 0.597 (1.09)**	pCi/L	09/16/20 10:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Sample: HGWC-117 **Lab ID: 92492559013** Collected: 08/27/20 17:48 Received: 08/28/20 11:08 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.193 ± 0.107 (0.167) C:87% T:NA**	pCi/L	09/10/20 19:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.131 ± 0.403 (0.963) C:64% T:85%**	pCi/L	09/15/20 15:05	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.193 ± 0.510 (1.13)**	pCi/L	09/16/20 10:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

QC Batch: 412356
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92492559001, 92492559002, 92492559003

METHOD BLANK: 1994515
Matrix: Water
Associated Lab Samples: 92492559001, 92492559002, 92492559003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0596 ± 0.133 (0.265) C:74% T:NA	pCi/L	09/11/20 18:17	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

QC Batch: 412342
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92492559005

METHOD BLANK: 1994498 Matrix: Water
Associated Lab Samples: 92492559005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.550 ± 0.369 (0.698) C:73% T:85%	pCi/L	09/15/20 14:39	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

QC Batch: 412347
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92492559004

METHOD BLANK: 1994502 Matrix: Water
Associated Lab Samples: 92492559004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.314 ± 0.487 (1.05) C:61% T:69%	pCi/L	09/16/20 14:42	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

QC Batch: 412358
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92492559004

METHOD BLANK: 1994517
Matrix: Water
Associated Lab Samples: 92492559004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0557 ± 0.119 (0.278) C:90% T:NA	pCi/L	09/14/20 08:58	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

QC Batch: 412345
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92492559006, 92492559007, 92492559008, 92492559009, 92492559010, 92492559011, 92492559012, 92492559013

METHOD BLANK: 1994499 Matrix: Water
Associated Lab Samples: 92492559006, 92492559007, 92492559008, 92492559009, 92492559010, 92492559011, 92492559012, 92492559013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.357 ± 0.355 (0.727) C:71% T:84%	pCi/L	09/15/20 15:02	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

QC Batch: 412351
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92492559005

METHOD BLANK: 1994513 Matrix: Water
Associated Lab Samples: 92492559005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0558 ± 0.230 (0.577) C:80% T:NA	pCi/L	09/10/20 07:35	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

QC Batch: 412352
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92492559006, 92492559007, 92492559008, 92492559009, 92492559010, 92492559011, 92492559012, 92492559013

METHOD BLANK: 1994514 Matrix: Water
Associated Lab Samples: 92492559006, 92492559007, 92492559008, 92492559009, 92492559010, 92492559011, 92492559012, 92492559013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.206 ± 0.102 (0.149) C:95% T:NA	pCi/L	09/10/20 19:37	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

QC Batch: 412346
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92492559001, 92492559002, 92492559003

METHOD BLANK: 1994501 Matrix: Water
Associated Lab Samples: 92492559001, 92492559002, 92492559003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.749 ± 0.397 (0.699) C:71% T:81%	pCi/L	09/16/20 11:37	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SCAN/BKG 07 RADS
Pace Project No.: 92492559

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92492559001	**HGWA-111**	EPA 9315	412356		
92492559002	**HGWA-112**	EPA 9315	412356		
92492559003	**HGWA-113**	EPA 9315	412356		
92492559004	**HGWC-118**	EPA 9315	412358		
92492559005	**HGWC-102**	EPA 9315	412351		
92492559006	**FB-02**	EPA 9315	412352		
92492559007	**FD-02**	EPA 9315	412352		
92492559008	**HGWC-101**	EPA 9315	412352		
92492559009	**HGWC-103**	EPA 9315	412352		
92492559010	**HGWC-107**	EPA 9315	412352		
92492559011	**HGWC-105**	EPA 9315	412352		
92492559012	**HGWC-109**	EPA 9315	412352		
92492559013	**HGWC-117**	EPA 9315	412352		
92492559001	**HGWA-111**	EPA 9320	412346		
92492559002	**HGWA-112**	EPA 9320	412346		
92492559003	**HGWA-113**	EPA 9320	412346		
92492559004	**HGWC-118**	EPA 9320	412347		
92492559005	**HGWC-102**	EPA 9320	412342		
92492559006	**FB-02**	EPA 9320	412345		
92492559007	**FD-02**	EPA 9320	412345		
92492559008	**HGWC-101**	EPA 9320	412345		
92492559009	**HGWC-103**	EPA 9320	412345		
92492559010	**HGWC-107**	EPA 9320	412345		
92492559011	**HGWC-105**	EPA 9320	412345		
92492559012	**HGWC-109**	EPA 9320	412345		
92492559013	**HGWC-117**	EPA 9320	412345		
92492559001	**HGWA-111**	Total Radium Calculation	414381		
92492559002	**HGWA-112**	Total Radium Calculation	414381		
92492559003	**HGWA-113**	Total Radium Calculation	414381		
92492559004	**HGWC-118**	Total Radium Calculation	414381		
92492559005	**HGWC-102**	Total Radium Calculation	414090		
92492559006	**FB-02**	Total Radium Calculation	414090		
92492559007	**FD-02**	Total Radium Calculation	414090		
92492559008	**HGWC-101**	Total Radium Calculation	414090		
92492559009	**HGWC-103**	Total Radium Calculation	414090		
92492559010	**HGWC-107**	Total Radium Calculation	414090		
92492559011	**HGWC-105**	Total Radium Calculation	414090		
92492559012	**HGWC-109**	Total Radium Calculation	414090		
92492559013	**HGWC-117**	Total Radium Calculation	414090		

Pace Analytical

Sample Condition Upon Recei

Client Name: GA Power

WO# : 92492559

92492559

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☑ Pace Other

Tracking #:

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals Intact: ☑ yes ☐ no

Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Thermometer Used 214

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

Cooler Temperature 4.6

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/26/2004

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑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 ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
All containers needing preservation have been checked.	☑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 ☑No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑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)

Pace Analytical

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
Email To: SCS Contacts
Phone: | Fax:
Requested Due Date/TAT: 10 Day

Section B Required Project Information:
Report To: SCS Contacts
Copy To: Geosyntec Contacts
Purchase Order No.:
Project Name: Plant Hammond AP-4 Scan/BKG 07
Project Number: GW6581

Section C Invoice Information:
Attention: Southern Co.
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #:

Page: 1 of 1

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR
Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

Requested Analysis Filtered (Y/N): Fluoride N; App IV Metals 6020/7470* N; RAD 226/228 N

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Fluoride	App IV Metals 6020/7470*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92492559
1	HGWA-111	WT	G			–	–		4	1		3						X	X	X	N	pH = 6.70
2	HGWA-112	WT	G			–	–		4	1		3						X	X	X	N	pH = 5.53
3	HGWA-113	WT	G			–	–		4	1		3						X	X	X	N	pH = 5.95
4	~~HGWC-104~~	~~WT~~	~~G~~						~~4~~	~~1~~		~~3~~						~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
5	~~HGWC-105~~	~~WT~~	~~G~~			–	–											~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
6	~~HGWC-106~~	~~WT~~	~~G~~			–	–		~~4~~	~~1~~		~~3~~						~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
7	~~HGWC-107~~	~~WT~~	~~G~~															~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
8	~~HGWC-109~~	~~WT~~	~~G~~			–	–		~~4~~	~~1~~		~~3~~						~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
9	~~HGWC-117~~	~~WT~~	~~G~~			–	–		~~4~~	~~1~~		~~3~~						~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
10	~~HGWC-118~~	~~WT~~	~~G~~															~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
11																						
12																						

AP / 8-25-2020

ADDITIONAL COMMENTS
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.

*App. IV Metals=Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
[signature] Sampler	8-25	1830	[signature] Geo	8/25	1830				
[signature] Geosyntec	8/26	0949	[signature]	8/26	9:52				
			[signature]	8/26/20	1200	4.6	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Aaron Reeder
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM/DD/YY): 08/25/2020

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 late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

Section A Required Client Information:

Company: GA Power
Address: Atlanta, GA
Email To: SCS Contacts
Phone: Fax:
Requested Due Date/TAT: 10 Day

Section B Required Project Information:

Report To: SCS Contacts
Copy To: Geosyntec Contacts
Purchase Order No.:
Project Name: Plant Hammond AP-4 Scan/BKG 07
Project Number: GW6581

Section C Invoice Information:

Attention: Southern Co.
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N): Y/N	Analysis Test: Fluoride	App IV Metals 6020/7470*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~HGWA-111~~	WT	G			–	–		4	1		3						N	X	X	X	N	92492559
2	~~HGWA-112~~	WT	G			–	–		4	1		3						N	X	X	X	N	pH =
3	~~HGWA-113~~	WT	G			–	–		4	1		3						N	X	X	X	N	pH =
4	~~HGWC-101~~	WT	G			–	–		4	1		3						N	X	X	X	N	pH =
5	~~HGWC-103~~	WT	G			–	–		4	1		3						N	X	X	X	N	pH =
6	HGWC-105	WT	G			–	–		4	1		3						N	X	X	X	N	pH =
7	~~HGWC-107~~	WT	G			–	–		4	1		3						N	X	X	X	N	pH =
8	~~HGWC-109~~	WT	G			–	–		4	1		3						N	X	X	X	N	pH =
9	~~HGWC-117~~	WT	G			–	–		4	1		3						N	X	X	X	N	pH =
10	HGWC-118	WT	G	8/26	1536	–	–	20	4	1		3						N	X	X	X	N	pH = 6.97 0021
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Chad Russo/GEO	8/26/20	1740		8-26-20	1790	
		8/27/20	0805	Tom Weaver Geosyntec	8/27/20	0805	
*App. IV Metals=Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Tom Weaver Geosyntec	8/27/20	0826	B Pace	8/27/20	0856	
	D M / Pace	8/27/20	12:46	K. Williams/PACE	8/27/20	1240	Temp in °C: 4.1 / Received on Ice (Y/N): Y / Custody Sealed Cooler (Y/N): Y / Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo DATE Signed (MM/DD/YY): 8/26/2020

*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.

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 3

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Scan/BKG 07
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	Collected Composite Start DATE	TIME	Composite End/Grab DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate (N)	TDS (N)	App. III & IV Metals 6010/6020/7470 (N)	RAD 226/228 (N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92492554
1	HGWC-102	WT	G	08/27	15:45	–	–	83	5	2		3							X	X	X	X	N	pH = 5.7 005
2	FB-02	WT	G	08/27	18:30	–	–		5	2		3							X	X	X	X	N	006
3	FD-02	WT	G	08/27	[redacted]	–	–		5	2		3							X	X	X	X	N	007
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

TJ 8/27/20

ADDITIONAL COMMENTS

Please note dry wells, strike thorough any wells not sampled, and note when the last sample for the event has been taken.

App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Thomas Kessler / geo	8/27	1900	[illegible] / GEO	8/27	1900
[illegible] / geo	8/27	2005	Nadia Martin / Geosyntec	8/27/20	2005
Nadia Martin / Geosyntec	8/28/20	11:05	[illegible] / Pace	8/28/20	1105
[illegible] / Pace	8/28/20	4:10	[illegible]	8/28/20	1610

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas Kessler

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 08/27/2020

*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

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 of 3

Section A
Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B
Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Scan/BKG 07
Project Number:	GW6581

Section C
Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY

- ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
- ☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D
Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Fluoride (N)	App IV Metals 6020/7470* (N)	RAD 226/228 (N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 4242559
1	~~HGWA-111~~	WT	G						4	1		3						X	X	X	N	pH =
2	~~HGWA-112~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
3	~~HGWA-113~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
4	HGWC-101	WT	G	8/27	11:30	–	–	35	4	1		3						X	X	X	N	pH = 5.32 006
5	HGWC-103	WT	G	8/27	13:46	–	–	20	4	1		3						X	X	X	N	pH = 5.92 004
6	~~HGWC-105~~	WT	G			–			4	1		3						X	X	X	N	pH =
7	HGWC-107	WT	G	8/27	17:30	–	–	21	4	1		3						X	X	X	N	pH = 6.09 010
8	~~HGWC-109~~	WT	G			–	–		4	1		3						X	X	X	N	pH =
9	~~HGWC-117~~	WT	G						4	1		3						X	X	X	N	pH =
10	~~HGWC-118~~	WT	G						4	1		3						X	X	X	N	pH =
11																						
12																						

ADDITIONAL COMMENTS

Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.

*App. IV Metals=Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Thomas Kessler / Geo	08/27	19:00	[signature] / Geo	8/27	1900
[signature]	8/27	2005	Malia Minton / Geosyntec	8/27/20	2005
Malia Minton / Geosyntec	8/28/20	11:05	[signature] / Pace	8/28/20	1108
[signature] / Pace	8/28/20	4:10	[signature]	8/28/20	1610

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas Kessler

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 08/27/2020

*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

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Page: 3 of 3

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Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

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Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Scan/BKG 07
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N): Fluoride	App IV Metals 6020/7470*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~HGWA-111~~	WT	G			--	--		4	1		3							X	X	X	N	pH =
2	HGWA-112	WT	G			--	--		4	1		3							X	X	X	N	pH =
3	~~HGWA-113~~	WT	G			--	--		4	1		3							X	X	X	N	pH =
4	HGWC-101	WT	G			--	--		4	1		3							X	X	X	N	pH =
5	~~HGWC-103~~	WT	G			--	--		4	1		3							X	X	X	N	pH =
6	HGWC-105	WT	G	8/27	1343	--	--	20	4	1		3							X	X	X	N	pH = 6.45 OLC
7	~~HGWC-107~~	WT	G			--	--		4	1		3							X	X	X	N	pH =
8	HGWC-109	WT	G	8/27	1512	--	--	20	4	1		3							X	X	X	N	pH = 6.64 OLC
9	HGWC-117	WT	G	8/27	1048	--	--	20	4	1		3							X	X	X	N	pH = 5.92 Last sample OLC
10	~~HGWC-118~~	WT	G			--	--		4	1		3							X	X	X	N	pH =
11									(CK)														
12									8/27/2020														

Pace Project No./ Lab I.D.: 62442554

ADDITIONAL COMMENTS

Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.

*App. IV Metals=Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Chad Russo / SCS	8/27/20	2005	Natalia Mishan / Geosyntec	8/27/20	2005
Natalia Mishan / Geosyntec	8/28/20	11:05	/ Pace	8/28/20	1109
/ Pace	8/28/20	4:10	Chanda Hawkins	8/28/20	1610

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo

DATE Signed (MM/DD/YY): 8/27/2020

*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.

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-226
Analyst:	LAL
Date:	9/9/2020
Worklist:	55958
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1994513
MB concentration:	0.056
M/B Counting Uncertainty:	0.230
MB MDC:	0.577
MB Numerical Performance Indicator:	0.48
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS55958	LCSD55958
Count Date:	9/10/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.507	
Target Conc. (pCi/L, g, F):	4.743	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.838	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.784	
Numerical Performance Indicator:	0.24	
Percent Recovery:	102.00%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92492363001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92492363001DUP	
Sample Result (pCi/L, g, F):	1.528	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.511	
Sample Duplicate Result (pCi/L, g, F):	1.338	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.498	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.522	92492363001
Duplicate RPD:	13.26%	92492363001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

VAM 9/10/2020

VAM 9/10/2020

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-226
Analyst:	LAL
Date:	9/9/2020
Worklist:	55958
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1994513
MB concentration:	0.056
M/B Counting Uncertainty:	0.230
MB MDC:	0.577
MB Numerical Performance Indicator:	0.48
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS55958	LCSD55958
Count Date:	9/10/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.507	
Target Conc. (pCi/L, g, F):	4.743	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.838	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.784	
Numerical Performance Indicator:	0.24	
Percent Recovery:	102.00%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92492363002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92492363002DUP	
Sample Result (pCi/L, g, F):	1.477	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.490	
Sample Duplicate Result (pCi/L, g, F):	1.354	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.517	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.338	92492363002
Duplicate RPD:	8.67%	92492363002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

9/10/2020

LAM 9/10/2020

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-226
Analyst:	LAL
Date:	9/10/2020
Worklist:	55959
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1994514
MB concentration:	0.206
M/B Counting Uncertainty:	0.098
MB MDC:	0.149
MB Numerical Performanca Indicator:	4.13
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS55959	LCSD55959
Count Date:	9/11/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.507	
Target Conc. (pCi/L, g, F):	4.740	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.372	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.792	
Numerical Performance Indicator:	-0.91	
Percent Recovery:	92.23%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92492559006	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92492559006DUP	
Sample Result (pCi/L, g, F):	0.288	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.138	
Sample Duplicate Result (pCi/L, g, F):	0.063	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.153	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	2.147	92492559006
Duplicate RPD:	128.44%	92492559006DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

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

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

Comments:

*The method blank result is below the reporting limit for this analysis and is acceptable.

~~***Batch must be re-prepped due to unacceptable precision.~~ N/A LAM 9/11/2020

LAM 9/11/2020

Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Test:	Ra-226
Analyst:	LAL
Date:	9/10/2020
Worklist:	55959
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1994514
MB concentration:	0.206
M/B Counting Uncertainty:	0.098
MB MDC:	0.149
MB Numerical Performance Indicator:	4.13
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS55959	LCSD55959
Count Date:	9/11/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.507	
Target Conc. (pCi/L, g, F):	4.740	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.372	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.792	
Numerical Performance Indicator:	-0.91	
Percent Recovery:	92.23%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92492559007	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92492559007DUP	
Sample Result (pCi/L, g, F):	0.269	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.118	
Sample Duplicate Result (pCi/L, g, F):	0.234	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.201	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.291	92492559007
Duplicate RPD:	13.77%	92492559007DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:
*The method blank result is below the reporting limit for this analysis and is acceptable.

LAM 9/11/2020

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-226
Analyst:	LAL
Date:	9/11/2020
Worklist:	55960
Matrix:	DW

Method Blank Assessment	
MB Sample ID	1994515
MB concentration:	0.060
M/B Counting Uncertainty:	0.133
MB MDC:	0.265
MB Numerical Performance Indicator:	0.88
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS55960	LCSD55960
Count Date:	9/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.505	
Target Conc. (pCi/L, g, F):	4.759	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	5.322	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.689	
Numerical Performance Indicator:	1.60	
Percent Recovery:	111.84%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92493016012	Enter Duplicate sample IDs if other then LCS/LCSD in the space below.
Duplicate Sample I.D.	92493016012DUP	
Sample Result (pCi/L, g, F):	4.731	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.626	
Sample Duplicate Result (pCi/L, g, F):	5.414	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.692	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.435	92493016012
Duplicate RPD:	13.47%	92493016012DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

JMW 9/14/2020

LAM 9/14/2020

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-226
Analyst:	LAL
Date:	9/11/2020
Worklist:	55960
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1994515
MB concentration:	0.060
M/B Counting Uncertainty:	0.133
MB MDC:	0.265
MB Numerical Performance Indicator:	0.88
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS55960	LCSD55960
Count Date:	9/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.505	
Target Conc. (pCi/L, g, F):	4.759	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	5.322	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.689	
Numerical Performance Indicator:	1.60	
Percent Recovery:	111.84%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92493016013	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92493016013DUP	
Sample Result (pCi/L, g, F):	6.412	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.759	
Sample Duplicate Result (pCi/L, g, F):	5.852	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.718	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	1.050	92493016013
Duplicate RPD:	9.13%	92493016013DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

9/14/2020

9/14/2020

Quality Control Sample Performance Assessment

Pace Analytical™
www.pacelabs.com

Test: Ra-226
Analyst: LAL
Date: 9/11/2020
Worklist: 55961
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1994517
MB concentration:	0.056
M/B Counting Uncertainty:	0.118
MB MDC:	0.278
MB Numerical Performance Indicator:	0.92
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS55961	LCSD55961
Count Date:	9/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.522	
Target Conc. (pCi/L, g, F):	4.609	
Uncertainty (Calculated):	0.055	
Result (pCi/L, g, F):	4.395	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.589	
Numerical Performance Indicator:	-0.71	
Percent Recovery:	95.35%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92492413011	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92492413011DUP	
Sample Result (pCi/L, g, F):	0.357	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.211	
Sample Duplicate Result (pCi/L, g, F):	0.265	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.184	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.647	92492413011
Duplicate RPD:	29.70%	92492413011DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

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

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

Comments:

~~***Batch must be re-prepped due to unacceptable precision.~~ N/A
LAM 9/14/2020

QAM 9/14/2020

LAM 9/14/2020

Quality Control Sample Performance Assessment

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Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-226
Analyst:	LAL
Date:	9/11/2020
Worklist:	55961
Matrix:	DW

Method Blank Assessment	
MB Sample ID	1994517
MB concentration:	0.056
M/B Counting Uncertainty:	0.118
MB MDC:	0.278
MB Numerical Performance Indicator:	0.92
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS55961	LCSD55961
Count Date:	9/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.522	
Target Conc. (pCi/L, g, F):	4.609	
Uncertainty (Calculated):	0.055	
Result (pCi/L, g, F):	4.395	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.589	
Numerical Performance Indicator:	-0.71	
Percent Recovery:	95.35%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92492413010	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92492413010DUP	
Sample Result (pCi/L, g, F):	0.313	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.192	
Sample Duplicate Result (pCi/L, g, F):	0.186	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.181	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.939	92492413010
Duplicate RPD:	50.74%	92492413010DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

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

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

Comments:

~~***Batch must be re-prepped due to unacceptable precision.~~ N/A

9/11/2020

LAM 9/14/2020

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-228
Analyst:	VAL
Date:	9/9/2020
Worklist:	55953
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1994498
MB concentration:	0.550
M/B 2 Sigma CSU:	0.369
MB MDC:	0.698
MB Numerical Performance Indicator:	2.92
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS55953	LCSD55953
Count Date:	9/15/2020	9/15/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.394	38.395
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.804	0.812
Target Conc. (pCi/L, g, F):	4.775	4.731
Uncertainty (Calculated):	0.234	0.232
Result (pCi/L, g, F):	4.305	4.600
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.011	1.072
Numerical Performance Indicator:	-0.89	-0.23
Percent Recovery:	90.15%	97.24%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS55953	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD55953	
Sample Result (pCi/L, g, F):	4.305	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.011	
Sample Duplicate Result (pCi/L, g, F):	4.600	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.072	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.393	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	7.57%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:

9/16/20

9-16-20

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-228
Analyst:	VAL
Date:	9/9/2020
Worklist:	55954
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1994499
MB concentration:	0.357
M/B 2 Sigma CSU:	0.355
MB MDC:	0.727
MB Numerical Performance Indicator:	1.97
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS55954	LCSD55954
Count Date:	9/15/2020	9/15/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.394	38.394
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.808	0.829
Target Conc. (pCi/L, g, F):	4.752	4.632
Uncertainty (Calculated):	0.233	0.227
Result (pCi/L, g, F):	5.042	4.838
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.200	1.149
Numerical Performance Indicator:	0.46	0.34
Percent Recovery:	106.10%	104.44%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS55954	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD55954	
Sample Result (pCi/L, g, F):	5.042	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.200	
Sample Duplicate Result (pCi/L, g, F):	4.838	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.149	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.241	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	1.57%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-228
Analyst:	VAL
Date:	9/10/2020
Worklist:	55955
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1994501
MB concentration:	0.749
M/B 2 Sigma CSU:	0.397
MB MDC:	0.699
MB Numerical Performance Indicator:	3.70
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS55955	LCSD55955
Count Date:	9/16/2020	9/16/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.383	38.383
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.811	0.800
Target Conc. (pCi/L, g, F):	4.730	4.796
Uncertainty (Calculated):	0.232	0.235
Result (pCi/L, g, F):	5.530	6.376
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.311	1.417
Numerical Performance Indicator:	1.18	2.16
Percent Recovery:	116.90%	132.93%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS55955	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD55955	
Sample Result (pCi/L, g, F):	5.530	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.311	
Sample Duplicate Result (pCi/L, g, F):	6.376	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.417	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.860	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	12.84%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:
*The method blank result is below the reporting limit for this analysis and is acceptable.

9-17-20

9.17.20

Quality Control Sample Performance Assessment

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Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-228
Analyst:	VAL
Date:	9/10/2020
Worklist:	55956
Matrix:	WT

Method Blank Assessment	
MB Sample ID	1994502
MB concentration:	0.314
M/B 2 Sigma CSU:	0.487
MB MDC:	1.054
MB Numericel Performance Indicator:	1.26
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS55956	LCSD55956
Count Date:	9/16/2020	9/16/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.382	38.382
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.813	0.814
Target Conc. (pCi/L, g, F):	4.719	4.715
Uncertainty (Calculated):	0.231	0.231
Result (pCi/L, g, F):	5.086	5.348
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.251	1.293
Numerical Performance Indicator:	0.57	0.94
Percent Recovery:	107.78%	113.43%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS55956	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD55956	
Sample Result (pCi/L, g, F):	5.086	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.251	
Sample Duplicate Result (pCi/L, g, F):	5.348	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.293	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.285	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	5.11%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:

9-17-20

9.17.20

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 13, 2020

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

RE: Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 21, 2020 and September 29, 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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Pace Analytical Services Charlotte
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners
110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812
North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

SAMPLE SUMMARY

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92496524001	**HGWA-111**	Water	09/18/20 09:43	09/21/20 09:25
92496524002	**HGWA-112**	Water	09/18/20 11:39	09/21/20 09:25
92496524003	**HGWA-47**	Water	09/18/20 11:20	09/21/20 09:25
92496524004	**HGWA-48D**	Water	09/18/20 11:06	09/21/20 09:25
92496524005	**FB-04**	Water	09/18/20 16:40	09/21/20 09:25
92496524006	**HGWA-113**	Water	09/22/20 11:30	09/23/20 09:25
92496524007	**HGWA-113 FILTERED**	Water	09/22/20 12:15	09/23/20 09:25
92496524008	**HGWC-102**	Water	09/24/20 16:51	09/25/20 10:45
92496524009	**HGWC-101**	Water	09/24/20 13:25	09/25/20 10:45
92496524010	**HGWC-103**	Water	09/24/20 18:30	09/25/20 10:45
92496524011	**HGWC-105**	Water	09/24/20 15:05	09/25/20 10:45
92496524012	**FD-04**	Water	09/24/20 00:00	09/25/20 10:45
92496524013	**HGWC-107**	Water	09/24/20 16:56	09/25/20 10:45
92496524014	**HGWC-109**	Water	09/25/20 16:20	09/28/20 09:40
92496524015	**HGWC-117**	Water	09/25/20 16:25	09/28/20 09:40
92496524016	**HGWC-118**	Water	09/28/20 12:56	09/29/20 08:55

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92496524001	**HGWA-111**	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92496524002	**HGWA-112**	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92496524003	**HGWA-47**	EPA 6010D	DRB	1
		EPA 6020B	KH	13
		EPA 7470A	FFP	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92496524004	**HGWA-48D**	EPA 6010D	DRB	1
		EPA 6020B	KH	13
		EPA 7470A	FFP	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92496524005	**FB-04**	EPA 6010D	DRB	1
		EPA 6020B	KH	13
		EPA 7470A	FFP	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92496524006	**HGWA-113**	EPA 6010D	DRB	1
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92496524007	**HGWA-113 FILTERED**	EPA 6010D	DRB	1
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496524008	**HGWC-102**	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496524009	**HGWC-101**	EPA 6010D	DRB	1

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496524010	**HGWC-103**	EPA 6010D	DRB	1
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496524011	**HGWC-105**	EPA 6010D	DRB	1
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496524012	**FD-04**	EPA 6010D	DRB	1
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92496524013	**HGWC-107**	EPA 6010D	DRB	1
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92496524014	**HGWC-109**	EPA 6010D	DRB	1
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496524015	**HGWC-117**	EPA 6010D	DRB	1
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92496524016	**HGWC-118**	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496524001	**HGWA-111**					
	pH	6.46	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	32.2	mg/L	1.0	09/24/20 19:55	
EPA 6020B	Barium	0.024	mg/L	0.010	09/25/20 19:56	
EPA 6020B	Boron	0.011J	mg/L	0.10	09/25/20 19:56	
EPA 6020B	Chromium	0.00077J	mg/L	0.010	09/25/20 19:56	
EPA 6020B	Lead	0.00026J	mg/L	0.0050	09/25/20 19:56	
EPA 6020B	Lithium	0.0021J	mg/L	0.030	09/25/20 19:56	
SM 2450C-2011	Total Dissolved Solids	139	mg/L	10.0	09/23/20 13:16	
EPA 300.0 Rev 2.1 1993	Chloride	2.6	mg/L	1.0	09/24/20 10:49	
EPA 300.0 Rev 2.1 1993	Sulfate	1.0	mg/L	1.0	09/24/20 10:49	
92496524002	**HGWA-112**					
	pH	5.58	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	6.5	mg/L	1.0	09/24/20 20:00	
EPA 6020B	Barium	0.025	mg/L	0.010	09/25/20 20:02	
EPA 6020B	Boron	0.0080J	mg/L	0.10	09/25/20 20:02	
EPA 6020B	Chromium	0.0037J	mg/L	0.010	09/25/20 20:02	
EPA 6020B	Lead	0.000065J	mg/L	0.0050	09/25/20 20:02	
SM 2450C-2011	Total Dissolved Solids	62.0	mg/L	10.0	09/23/20 13:16	
EPA 300.0 Rev 2.1 1993	Chloride	5.2	mg/L	1.0	09/24/20 11:33	
92496524003	**HGWA-47**					
	pH	7.54	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	62.2	mg/L	1.0	09/24/20 20:04	
EPA 6020B	Barium	0.026	mg/L	0.010	09/25/20 20:07	
EPA 6020B	Boron	0.0082J	mg/L	0.10	09/25/20 20:07	
EPA 6020B	Chromium	0.0039J	mg/L	0.010	09/25/20 20:07	
EPA 6020B	Cobalt	0.00049J	mg/L	0.0050	09/25/20 20:07	
EPA 6020B	Lithium	0.0026J	mg/L	0.030	09/25/20 20:07	
EPA 6020B	Molybdenum	0.0015J	mg/L	0.010	09/25/20 20:07	
SM 2450C-2011	Total Dissolved Solids	195	mg/L	10.0	09/23/20 13:17	
EPA 300.0 Rev 2.1 1993	Chloride	2.7	mg/L	1.0	09/24/20 11:47	
EPA 300.0 Rev 2.1 1993	Fluoride	0.067J	mg/L	0.10	09/24/20 11:47	
EPA 300.0 Rev 2.1 1993	Sulfate	3.5	mg/L	1.0	09/24/20 11:47	
92496524004	**HGWA-48D**					
	pH	7.50	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	51.8	mg/L	1.0	09/24/20 20:08	
EPA 6020B	Antimony	0.00038J	mg/L	0.0030	09/25/20 20:13	
EPA 6020B	Barium	0.077	mg/L	0.010	09/25/20 20:13	
EPA 6020B	Boron	0.015J	mg/L	0.10	09/25/20 20:13	
EPA 6020B	Lithium	0.0051J	mg/L	0.030	09/25/20 20:13	
EPA 6020B	Molybdenum	0.0026J	mg/L	0.010	09/25/20 20:13	
SM 2450C-2011	Total Dissolved Solids	224	mg/L	10.0	09/23/20 13:17	
EPA 300.0 Rev 2.1 1993	Chloride	2.6	mg/L	1.0	09/24/20 12:01	
EPA 300.0 Rev 2.1 1993	Fluoride	0.098J	mg/L	0.10	09/24/20 12:01	
EPA 300.0 Rev 2.1 1993	Sulfate	9.5	mg/L	1.0	09/24/20 12:01	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496524006	**HGWA-113**					
	pH	6.10	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	7.9	mg/L	1.0	09/25/20 22:03	
EPA 6020B	Barium	0.038	mg/L	0.010	09/30/20 19:15	
EPA 6020B	Beryllium	0.000099J	mg/L	0.0030	09/30/20 19:15	
EPA 6020B	Boron	0.021J	mg/L	0.10	09/30/20 19:15	
EPA 6020B	Chromium	0.0046J	mg/L	0.010	09/30/20 19:15	
EPA 6020B	Cobalt	0.00074J	mg/L	0.0050	09/30/20 19:15	
EPA 6020B	Lead	0.00096J	mg/L	0.0050	09/30/20 19:15	
EPA 6020B	Lithium	0.0018J	mg/L	0.030	09/30/20 19:15	
SM 2450C-2011	Total Dissolved Solids	84.0	mg/L	10.0	09/24/20 10:29	
EPA 300.0 Rev 2.1 1993	Chloride	1.5	mg/L	1.0	09/25/20 22:41	
EPA 300.0 Rev 2.1 1993	Fluoride	0.16	mg/L	0.10	09/25/20 22:41	
EPA 300.0 Rev 2.1 1993	Sulfate	5.3	mg/L	1.0	09/25/20 22:41	
92496524007	**HGWA-113 FILTERED**					
	pH	6.10	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	7.6	mg/L	1.0	09/25/20 22:07	
EPA 6020B	Barium	0.027	mg/L	0.010	09/30/20 19:20	
EPA 6020B	Boron	0.015J	mg/L	0.10	09/30/20 19:20	
EPA 6020B	Chromium	0.0025J	mg/L	0.010	09/30/20 19:20	
EPA 6020B	Lead	0.000095J	mg/L	0.0050	09/30/20 19:20	
EPA 6020B	Lithium	0.0010J	mg/L	0.030	09/30/20 19:20	
SM 2450C-2011	Total Dissolved Solids	89.0	mg/L	10.0	09/24/20 10:29	
EPA 300.0 Rev 2.1 1993	Chloride	1.3	mg/L	1.0	09/27/20 01:23	
EPA 300.0 Rev 2.1 1993	Sulfate	1.8	mg/L	1.0	09/27/20 01:23	
92496524008	**HGWC-102**					
	Performed by	CUSTOMER			09/29/20 12:28	
	pH	5.82	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	120	mg/L	1.0	10/01/20 17:49	
EPA 6020B	Barium	0.029	mg/L	0.010	10/01/20 20:41	
EPA 6020B	Boron	2.9	mg/L	0.50	10/03/20 12:10	
EPA 6020B	Cadmium	0.00032J	mg/L	0.0025	10/01/20 20:41	
EPA 6020B	Cobalt	0.0011J	mg/L	0.0050	10/01/20 20:41	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	10/01/20 20:41	
SM 2450C-2011	Total Dissolved Solids	696	mg/L	20.0	09/30/20 09:28	
EPA 300.0 Rev 2.1 1993	Chloride	7.2	mg/L	1.0	09/29/20 15:09	
EPA 300.0 Rev 2.1 1993	Sulfate	370	mg/L	8.0	09/29/20 19:29	
92496524009	**HGWC-101**					
	Performed by	CUSTOMER			09/29/20 12:28	
	pH	5.48	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	20.3	mg/L	1.0	10/01/20 17:53	
EPA 6020B	Barium	0.041	mg/L	0.010	10/01/20 20:47	
EPA 6020B	Beryllium	0.000048J	mg/L	0.0030	10/01/20 20:47	
EPA 6020B	Boron	0.10	mg/L	0.10	10/03/20 12:37	
EPA 6020B	Cadmium	0.00014J	mg/L	0.0025	10/01/20 20:47	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496524009	**HGWC-101**					
EPA 6020B	Cobalt	0.0021J	mg/L	0.0050	10/01/20 20:47	
SM 2450C-2011	Total Dissolved Solids	170	mg/L	10.0	09/30/20 09:28	
EPA 300.0 Rev 2.1 1993	Chloride	5.5	mg/L	1.0	09/29/20 15:23	
EPA 300.0 Rev 2.1 1993	Sulfate	97.0	mg/L	2.0	09/29/20 19:44	
92496524010	**HGWC-103**					
	Performed by	CUSTOMER			09/29/20 12:28	
	pH	5.60	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	91.3	mg/L	1.0	10/01/20 17:58	
EPA 6020B	Barium	0.036	mg/L	0.010	10/01/20 21:22	
EPA 6020B	Beryllium	0.000088J	mg/L	0.0030	10/01/20 21:22	
EPA 6020B	Boron	2.2	mg/L	0.10	10/01/20 21:22	
EPA 6020B	Cadmium	0.00076J	mg/L	0.0025	10/01/20 21:22	
EPA 6020B	Chromium	0.00081J	mg/L	0.010	10/01/20 21:22	
EPA 6020B	Cobalt	0.0019J	mg/L	0.0050	10/01/20 21:22	
EPA 6020B	Lead	0.00028J	mg/L	0.0050	10/01/20 21:22	
EPA 6020B	Lithium	0.0017J	mg/L	0.030	10/01/20 21:22	
SM 2450C-2011	Total Dissolved Solids	517	mg/L	10.0	09/30/20 09:28	
EPA 300.0 Rev 2.1 1993	Chloride	6.0	mg/L	1.0	09/29/20 16:06	
EPA 300.0 Rev 2.1 1993	Sulfate	293	mg/L	6.0	09/29/20 19:58	
92496524011	**HGWC-105**					
	Performed by	CUSTOMER			09/29/20 12:28	
	pH	6.63	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	92.9	mg/L	1.0	10/01/20 18:02	
EPA 6020B	Barium	0.075	mg/L	0.010	10/01/20 21:44	
EPA 6020B	Boron	1.2	mg/L	0.10	10/01/20 21:44	
EPA 6020B	Chromium	0.00064J	mg/L	0.010	10/01/20 21:44	
EPA 6020B	Cobalt	0.00044J	mg/L	0.0050	10/01/20 21:44	
EPA 6020B	Lead	0.000049J	mg/L	0.0050	10/01/20 21:44	
EPA 6020B	Lithium	0.0038J	mg/L	0.030	10/01/20 21:44	
SM 2450C-2011	Total Dissolved Solids	411	mg/L	10.0	09/30/20 09:28	
EPA 300.0 Rev 2.1 1993	Chloride	3.9	mg/L	1.0	09/29/20 16:21	
EPA 300.0 Rev 2.1 1993	Sulfate	177	mg/L	4.0	09/29/20 20:12	
92496524012	**FD-04**					
EPA 6010D	Calcium	85.7	mg/L	1.0	10/01/20 18:06	
EPA 6020B	Barium	0.037	mg/L	0.010	10/01/20 21:50	
EPA 6020B	Beryllium	0.000067J	mg/L	0.0030	10/01/20 21:50	
EPA 6020B	Boron	2.3	mg/L	0.10	10/01/20 21:50	
EPA 6020B	Cadmium	0.00079J	mg/L	0.0025	10/01/20 21:50	
EPA 6020B	Chromium	0.00098J	mg/L	0.010	10/01/20 21:50	
EPA 6020B	Cobalt	0.0019J	mg/L	0.0050	10/01/20 21:50	
EPA 6020B	Lead	0.00026J	mg/L	0.0050	10/01/20 21:50	
EPA 6020B	Lithium	0.0017J	mg/L	0.030	10/01/20 21:50	
SM 2450C-2011	Total Dissolved Solids	536	mg/L	10.0	09/30/20 09:29	
EPA 300.0 Rev 2.1 1993	Chloride	8.9	mg/L	1.0	09/29/20 20:26	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496524012	**FD-04**					
EPA 300.0 Rev 2.1 1993	Sulfate	298	mg/L	6.0	09/30/20 02:37	
92496524013	**HGWC-107**					
	Performed by	CUSTOMER			09/29/20 12:28	
	pH	6.11	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	55.4	mg/L	1.0	10/01/20 18:10	
EPA 6020B	Barium	0.039	mg/L	0.010	10/01/20 21:56	
EPA 6020B	Boron	0.88	mg/L	0.10	10/01/20 21:56	
EPA 6020B	Lead	0.00034J	mg/L	0.0050	10/01/20 21:56	
EPA 6020B	Lithium	0.00098J	mg/L	0.030	10/01/20 21:56	
SM 2450C-2011	Total Dissolved Solids	253	mg/L	10.0	09/30/20 09:29	
EPA 300.0 Rev 2.1 1993	Chloride	3.5	mg/L	1.0	09/29/20 21:08	
EPA 300.0 Rev 2.1 1993	Fluoride	0.064J	mg/L	0.10	09/29/20 21:08	
EPA 300.0 Rev 2.1 1993	Sulfate	126	mg/L	3.0	09/30/20 03:39	
92496524014	**HGWC-109**					
	Performed by	CUSTOMER			09/29/20 12:28	
	pH	6.79	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	48.5	mg/L	1.0	10/02/20 20:24	
EPA 6020B	Arsenic	0.0017J	mg/L	0.0050	10/03/20 16:48	
EPA 6020B	Barium	0.085	mg/L	0.010	10/03/20 16:48	
EPA 6020B	Boron	0.28	mg/L	0.10	10/03/20 16:48	
EPA 6020B	Cobalt	0.0010J	mg/L	0.0050	10/03/20 16:48	
EPA 6020B	Lithium	0.0010J	mg/L	0.030	10/03/20 16:48	
SM 2450C-2011	Total Dissolved Solids	188	mg/L	10.0	10/01/20 15:26	
EPA 300.0 Rev 2.1 1993	Chloride	4.1	mg/L	1.0	09/30/20 11:19	
EPA 300.0 Rev 2.1 1993	Fluoride	0.091J	mg/L	0.10	09/30/20 11:19	
EPA 300.0 Rev 2.1 1993	Sulfate	24.7	mg/L	1.0	09/30/20 11:19	
92496524015	**HGWC-117**					
	Performed by	CUSTOMER			09/29/20 12:28	
	pH	6.01	Std. Units		09/29/20 12:28	
EPA 6010D	Calcium	72.8	mg/L	1.0	10/05/20 19:01	M1
EPA 6020B	Barium	0.050	mg/L	0.010	10/03/20 16:54	
EPA 6020B	Beryllium	0.000066J	mg/L	0.0030	10/03/20 16:54	
EPA 6020B	Boron	1.1	mg/L	0.10	10/03/20 16:54	
EPA 6020B	Cadmium	0.00089J	mg/L	0.0025	10/03/20 16:54	
EPA 6020B	Chromium	0.00067J	mg/L	0.010	10/03/20 16:54	
EPA 6020B	Cobalt	0.011	mg/L	0.0050	10/03/20 16:54	
EPA 6020B	Lead	0.00019J	mg/L	0.0050	10/03/20 16:54	
EPA 6020B	Lithium	0.0031J	mg/L	0.030	10/03/20 16:54	
SM 2450C-2011	Total Dissolved Solids	340	mg/L	10.0	10/01/20 15:26	
EPA 300.0 Rev 2.1 1993	Chloride	16.1	mg/L	1.0	09/30/20 11:33	
EPA 300.0 Rev 2.1 1993	Sulfate	146	mg/L	3.0	09/30/20 19:08	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496524016	**HGWC-118**					
	Performed by	CUSTOMER			09/29/20 13:39	
	pH	7.03	Std. Units		09/29/20 13:39	
EPA 6010D	Calcium	88.9	mg/L	1.0	10/05/20 19:23	
EPA 6020B	Barium	0.046	mg/L	0.010	10/06/20 17:55	
EPA 6020B	Boron	0.65	mg/L	0.10	10/06/20 17:55	
EPA 6020B	Chromium	0.0017J	mg/L	0.010	10/06/20 17:55	
EPA 6020B	Cobalt	0.00048J	mg/L	0.0050	10/06/20 17:55	
EPA 6020B	Lead	0.00022J	mg/L	0.0050	10/06/20 17:55	
EPA 6020B	Lithium	0.0022J	mg/L	0.030	10/06/20 17:55	
SM 2450C-2011	Total Dissolved Solids	332	mg/L	10.0	10/01/20 15:27	
EPA 300.0 Rev 2.1 1993	Chloride	4.0	mg/L	1.0	10/01/20 15:23	
EPA 300.0 Rev 2.1 1993	Fluoride	0.078J	mg/L	0.10	10/01/20 15:23	
EPA 300.0 Rev 2.1 1993	Sulfate	86.0	mg/L	1.0	10/01/20 15:23	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWA-111 **Lab ID: 92496524001** Collected: 09/18/20 09:43 Received: 09/21/20 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**6.46**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**32.2**	mg/L	1.0	0.070	1	09/24/20 08:45	09/24/20 19:55	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	09/24/20 14:23	09/25/20 19:56	7440-38-2	
Barium	**0.024**	mg/L	0.010	0.00071	1	09/24/20 14:23	09/25/20 19:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 14:23	09/25/20 19:56	7440-41-7	
Boron	**0.011J**	mg/L	0.10	0.0052	1	09/24/20 14:23	09/25/20 19:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/24/20 14:23	09/25/20 19:56	7440-43-9	
Chromium	**0.00077J**	mg/L	0.010	0.00055	1	09/24/20 14:23	09/25/20 19:56	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/24/20 14:23	09/25/20 19:56	7440-48-4	
Lead	**0.00026J**	mg/L	0.0050	0.000036	1	09/24/20 14:23	09/25/20 19:56	7439-92-1	
Lithium	**0.0021J**	mg/L	0.030	0.00081	1	09/24/20 14:23	09/25/20 19:56	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**139**	mg/L	10.0	10.0	1		09/23/20 13:16		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**2.6**	mg/L	1.0	0.60	1		09/24/20 10:49	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/24/20 10:49	16984-48-8	
Sulfate	**1.0**	mg/L	1.0	0.50	1		09/24/20 10:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWA-112 **Lab ID: 92496524002** Collected: 09/18/20 11:39 Received: 09/21/20 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**5.58**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**6.5**	mg/L	1.0	0.070	1	09/24/20 08:45	09/24/20 20:00	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	09/24/20 14:23	09/25/20 20:02	7440-38-2	
Barium	**0.025**	mg/L	0.010	0.00071	1	09/24/20 14:23	09/25/20 20:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 14:23	09/25/20 20:02	7440-41-7	
Boron	**0.0080J**	mg/L	0.10	0.0052	1	09/24/20 14:23	09/25/20 20:02	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/24/20 14:23	09/25/20 20:02	7440-43-9	
Chromium	**0.0037J**	mg/L	0.010	0.00055	1	09/24/20 14:23	09/25/20 20:02	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/24/20 14:23	09/25/20 20:02	7440-48-4	
Lead	**0.000065J**	mg/L	0.0050	0.000036	1	09/24/20 14:23	09/25/20 20:02	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/24/20 14:23	09/25/20 20:02	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**62.0**	mg/L	10.0	10.0	1		09/23/20 13:16		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**5.2**	mg/L	1.0	0.60	1		09/24/20 11:33	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/24/20 11:33	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		09/24/20 11:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWA-47 **Lab ID: 92496524003** Collected: 09/18/20 11:20 Received: 09/21/20 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**7.54**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**62.2**	mg/L	1.0	0.070	1	09/24/20 08:45	09/24/20 20:04	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/24/20 14:23	09/25/20 20:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/24/20 14:23	09/25/20 20:07	7440-38-2	
Barium	**0.026**	mg/L	0.010	0.00071	1	09/24/20 14:23	09/25/20 20:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 14:23	09/25/20 20:07	7440-41-7	
Boron	**0.0082J**	mg/L	0.10	0.0052	1	09/24/20 14:23	09/25/20 20:07	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/24/20 14:23	09/25/20 20:07	7440-43-9	
Chromium	**0.0039J**	mg/L	0.010	0.00055	1	09/24/20 14:23	09/25/20 20:07	7440-47-3	
Cobalt	**0.00049J**	mg/L	0.0050	0.00038	1	09/24/20 14:23	09/25/20 20:07	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/24/20 14:23	09/25/20 20:07	7439-92-1	
Lithium	**0.0026J**	mg/L	0.030	0.00081	1	09/24/20 14:23	09/25/20 20:07	7439-93-2	
Molybdenum	**0.0015J**	mg/L	0.010	0.00069	1	09/24/20 14:23	09/25/20 20:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/24/20 14:23	09/25/20 20:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 14:23	09/25/20 20:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	09/22/20 11:15	09/23/20 10:36	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**195**	mg/L	10.0	10.0	1		09/23/20 13:17		
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		09/24/20 11:47	16887-00-6	
Fluoride	**0.067J**	mg/L	0.10	0.050	1		09/24/20 11:47	16984-48-8	
Sulfate	**3.5**	mg/L	1.0	0.50	1		09/24/20 11:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWA-48D **Lab ID: 92496524004** Collected: 09/18/20 11:06 Received: 09/21/20 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**7.50**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**51.8**	mg/L	1.0	0.070	1	09/24/20 08:45	09/24/20 20:08	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	**0.00038J**	mg/L	0.0030	0.00028	1	09/24/20 14:23	09/25/20 20:13	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/24/20 14:23	09/25/20 20:13	7440-38-2	
Barium	**0.077**	mg/L	0.010	0.00071	1	09/24/20 14:23	09/25/20 20:13	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 14:23	09/25/20 20:13	7440-41-7	
Boron	**0.015J**	mg/L	0.10	0.0052	1	09/24/20 14:23	09/25/20 20:13	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/24/20 14:23	09/25/20 20:13	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 14:23	09/25/20 20:13	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/24/20 14:23	09/25/20 20:13	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/24/20 14:23	09/25/20 20:13	7439-92-1	
Lithium	**0.0051J**	mg/L	0.030	0.00081	1	09/24/20 14:23	09/25/20 20:13	7439-93-2	
Molybdenum	**0.0026J**	mg/L	0.010	0.00069	1	09/24/20 14:23	09/25/20 20:13	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/24/20 14:23	09/25/20 20:13	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 14:23	09/25/20 20:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	09/22/20 11:15	09/23/20 10:38	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**224**	mg/L	10.0	10.0	1		09/23/20 13:17		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**2.6**	mg/L	1.0	0.60	1		09/24/20 12:01	16887-00-6	
Fluoride	**0.098J**	mg/L	0.10	0.050	1		09/24/20 12:01	16984-48-8	
Sulfate	**9.5**	mg/L	1.0	0.50	1		09/24/20 12:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: FB-04 **Lab ID: 92496524005** Collected: 09/18/20 16:40 Received: 09/21/20 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	09/24/20 08:45	09/24/20 20:13	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/24/20 14:23	09/25/20 20:19	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/24/20 14:23	09/25/20 20:19	7440-38-2	
Barium	ND	mg/L	0.010	0.00071	1	09/24/20 14:23	09/25/20 20:19	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 14:23	09/25/20 20:19	7440-41-7	
Boron	ND	mg/L	0.10	0.0052	1	09/24/20 14:23	09/25/20 20:19	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/24/20 14:23	09/25/20 20:19	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 14:23	09/25/20 20:19	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/24/20 14:23	09/25/20 20:19	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/24/20 14:23	09/25/20 20:19	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/24/20 14:23	09/25/20 20:19	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/24/20 14:23	09/25/20 20:19	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/24/20 14:23	09/25/20 20:19	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 14:23	09/25/20 20:19	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	09/22/20 11:15	09/23/20 10:41	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		09/23/20 13:17		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		09/24/20 12:45	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/24/20 12:45	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		09/24/20 12:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWA-113 **Lab ID: 92496524006** Collected: 09/22/20 11:30 Received: 09/23/20 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**6.10**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**7.9**	mg/L	1.0	0.070	1	09/24/20 14:20	09/25/20 22:03	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	09/29/20 14:13	09/30/20 19:15	7440-38-2	
Barium	**0.038**	mg/L	0.010	0.00071	1	09/29/20 14:13	09/30/20 19:15	7440-39-3	
Beryllium	**0.000099J**	mg/L	0.0030	0.000046	1	09/29/20 14:13	09/30/20 19:15	7440-41-7	
Boron	**0.021J**	mg/L	0.10	0.0052	1	09/29/20 14:13	09/30/20 19:15	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/29/20 14:13	09/30/20 19:15	7440-43-9	
Chromium	**0.0046J**	mg/L	0.010	0.00055	1	09/29/20 14:13	09/30/20 19:15	7440-47-3	
Cobalt	**0.00074J**	mg/L	0.0050	0.00038	1	09/29/20 14:13	09/30/20 19:15	7440-48-4	
Lead	**0.00096J**	mg/L	0.0050	0.000036	1	09/29/20 14:13	09/30/20 19:15	7439-92-1	
Lithium	**0.0018J**	mg/L	0.030	0.00081	1	09/29/20 14:13	09/30/20 19:15	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**84.0**	mg/L	10.0	10.0	1		09/24/20 10:29		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**1.5**	mg/L	1.0	0.60	1		09/25/20 22:41	16887-00-6	
Fluoride	**0.16**	mg/L	0.10	0.050	1		09/25/20 22:41	16984-48-8	
Sulfate	**5.3**	mg/L	1.0	0.50	1		09/25/20 22:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWA-113 FILTERED **Lab ID: 92496524007** Collected: 09/22/20 12:15 Received: 09/23/20 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**6.10**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**7.6**	mg/L	1.0	0.070	1	09/24/20 14:20	09/25/20 22:07	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	09/29/20 14:13	09/30/20 19:20	7440-38-2	
Barium	**0.027**	mg/L	0.010	0.00071	1	09/29/20 14:13	09/30/20 19:20	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/29/20 14:13	09/30/20 19:20	7440-41-7	
Boron	**0.015J**	mg/L	0.10	0.0052	1	09/29/20 14:13	09/30/20 19:20	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/29/20 14:13	09/30/20 19:20	7440-43-9	
Chromium	**0.0025J**	mg/L	0.010	0.00055	1	09/29/20 14:13	09/30/20 19:20	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/29/20 14:13	09/30/20 19:20	7440-48-4	
Lead	**0.000095J**	mg/L	0.0050	0.000036	1	09/29/20 14:13	09/30/20 19:20	7439-92-1	
Lithium	**0.0010J**	mg/L	0.030	0.00081	1	09/29/20 14:13	09/30/20 19:20	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**89.0**	mg/L	10.0	10.0	1		09/24/20 10:29		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**1.3**	mg/L	1.0	0.60	1		09/27/20 01:23	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/27/20 01:23	16984-48-8	
Sulfate	**1.8**	mg/L	1.0	0.50	1		09/27/20 01:23	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWC-102 **Lab ID: 92496524008** Collected: 09/24/20 16:51 Received: 09/25/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		09/29/20 12:28		
pH	**5.82**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**120**	mg/L	1.0	0.070	1	09/29/20 18:44	10/01/20 17:49	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/30/20 14:00	10/01/20 20:41	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 14:00	10/01/20 20:41	7440-38-2	
Barium	**0.029**	mg/L	0.010	0.00071	1	09/30/20 14:00	10/01/20 20:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/30/20 14:00	10/01/20 20:41	7440-41-7	
Boron	**2.9**	mg/L	0.50	0.026	5	09/30/20 14:00	10/03/20 12:10	7440-42-8	
Cadmium	**0.00032J**	mg/L	0.0025	0.00012	1	09/30/20 14:00	10/01/20 20:41	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 14:00	10/01/20 20:41	7440-47-3	
Cobalt	**0.0011J**	mg/L	0.0050	0.00038	1	09/30/20 14:00	10/01/20 20:41	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/30/20 14:00	10/01/20 20:41	7439-92-1	
Lithium	**0.0011J**	mg/L	0.030	0.00081	1	09/30/20 14:00	10/01/20 20:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 14:00	10/01/20 20:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 14:00	10/01/20 20:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 14:00	10/01/20 20:41	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	09/28/20 12:05	09/29/20 14:15	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**696**	mg/L	20.0	20.0	1		09/30/20 09:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**7.2**	mg/L	1.0	0.60	1		09/29/20 15:09	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/29/20 15:09	16984-48-8	
Sulfate	**370**	mg/L	8.0	4.0	8		09/29/20 19:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWC-101 **Lab ID: 92496524009** Collected: 09/24/20 13:25 Received: 09/25/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		09/29/20 12:28		
pH	**5.48**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**20.3**	mg/L	1.0	0.070	1	09/29/20 18:44	10/01/20 17:53	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 14:00	10/01/20 20:47	7440-38-2	
Barium	**0.041**	mg/L	0.010	0.00071	1	09/30/20 14:00	10/01/20 20:47	7440-39-3	
Beryllium	**0.000048J**	mg/L	0.0030	0.000046	1	09/30/20 14:00	10/01/20 20:47	7440-41-7	
Boron	**0.10**	mg/L	0.10	0.0052	1	09/30/20 14:00	10/03/20 12:37	7440-42-8	
Cadmium	**0.00014J**	mg/L	0.0025	0.00012	1	09/30/20 14:00	10/01/20 20:47	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 14:00	10/01/20 20:47	7440-47-3	
Cobalt	**0.0021J**	mg/L	0.0050	0.00038	1	09/30/20 14:00	10/01/20 20:47	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/30/20 14:00	10/01/20 20:47	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/30/20 14:00	10/01/20 20:47	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**170**	mg/L	10.0	10.0	1		09/30/20 09:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**5.5**	mg/L	1.0	0.60	1		09/29/20 15:23	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/29/20 15:23	16984-48-8	
Sulfate	**97.0**	mg/L	2.0	1.0	2		09/29/20 19:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWC-103 **Lab ID: 92496524010** Collected: 09/24/20 18:30 Received: 09/25/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		09/29/20 12:28		
pH	**5.60**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**91.3**	mg/L	1.0	0.070	1	09/29/20 18:44	10/01/20 17:58	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:45	10/01/20 21:22	7440-38-2	
Barium	**0.036**	mg/L	0.010	0.00071	1	09/30/20 17:45	10/01/20 21:22	7440-39-3	
Beryllium	**0.000088J**	mg/L	0.0030	0.000046	1	09/30/20 17:45	10/01/20 21:22	7440-41-7	
Boron	**2.2**	mg/L	0.10	0.0052	1	09/30/20 17:45	10/01/20 21:22	7440-42-8	
Cadmium	**0.00076J**	mg/L	0.0025	0.00012	1	09/30/20 17:45	10/01/20 21:22	7440-43-9	
Chromium	**0.00081J**	mg/L	0.010	0.00055	1	09/30/20 17:45	10/01/20 21:22	7440-47-3	
Cobalt	**0.0019J**	mg/L	0.0050	0.00038	1	09/30/20 17:45	10/01/20 21:22	7440-48-4	
Lead	**0.00028J**	mg/L	0.0050	0.000036	1	09/30/20 17:45	10/01/20 21:22	7439-92-1	
Lithium	**0.0017J**	mg/L	0.030	0.00081	1	09/30/20 17:45	10/01/20 21:22	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**517**	mg/L	10.0	10.0	1		09/30/20 09:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**6.0**	mg/L	1.0	0.60	1		09/29/20 16:06	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/29/20 16:06	16984-48-8	
Sulfate	**293**	mg/L	6.0	3.0	6		09/29/20 19:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWC-105 **Lab ID: 92496524011** Collected: 09/24/20 15:05 Received: 09/25/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		09/29/20 12:28		
pH	**6.63**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**92.9**	mg/L	1.0	0.070	1	09/29/20 18:44	10/01/20 18:02	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:45	10/01/20 21:44	7440-38-2	
Barium	**0.075**	mg/L	0.010	0.00071	1	09/30/20 17:45	10/01/20 21:44	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/30/20 17:45	10/01/20 21:44	7440-41-7	
Boron	**1.2**	mg/L	0.10	0.0052	1	09/30/20 17:45	10/01/20 21:44	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/30/20 17:45	10/01/20 21:44	7440-43-9	
Chromium	**0.00064J**	mg/L	0.010	0.00055	1	09/30/20 17:45	10/01/20 21:44	7440-47-3	
Cobalt	**0.00044J**	mg/L	0.0050	0.00038	1	09/30/20 17:45	10/01/20 21:44	7440-48-4	
Lead	**0.000049J**	mg/L	0.0050	0.000036	1	09/30/20 17:45	10/01/20 21:44	7439-92-1	
Lithium	**0.0038J**	mg/L	0.030	0.00081	1	09/30/20 17:45	10/01/20 21:44	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**411**	mg/L	10.0	10.0	1		09/30/20 09:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**3.9**	mg/L	1.0	0.60	1		09/29/20 16:21	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/29/20 16:21	16984-48-8	
Sulfate	**177**	mg/L	4.0	2.0	4		09/29/20 20:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: FD-04 **Lab ID: 92496524012** Collected: 09/24/20 00:00 Received: 09/25/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**85.7**	mg/L	1.0	0.070	1	09/29/20 18:44	10/01/20 18:06	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:45	10/01/20 21:50	7440-38-2	
Barium	**0.037**	mg/L	0.010	0.00071	1	09/30/20 17:45	10/01/20 21:50	7440-39-3	
Beryllium	**0.000067J**	mg/L	0.0030	0.000046	1	09/30/20 17:45	10/01/20 21:50	7440-41-7	
Boron	**2.3**	mg/L	0.10	0.0052	1	09/30/20 17:45	10/01/20 21:50	7440-42-8	
Cadmium	**0.00079J**	mg/L	0.0025	0.00012	1	09/30/20 17:45	10/01/20 21:50	7440-43-9	
Chromium	**0.00098J**	mg/L	0.010	0.00055	1	09/30/20 17:45	10/01/20 21:50	7440-47-3	
Cobalt	**0.0019J**	mg/L	0.0050	0.00038	1	09/30/20 17:45	10/01/20 21:50	7440-48-4	
Lead	**0.00026J**	mg/L	0.0050	0.000036	1	09/30/20 17:45	10/01/20 21:50	7439-92-1	
Lithium	**0.0017J**	mg/L	0.030	0.00081	1	09/30/20 17:45	10/01/20 21:50	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**536**	mg/L	10.0	10.0	1		09/30/20 09:29		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**8.9**	mg/L	1.0	0.60	1		09/29/20 20:26	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/29/20 20:26	16984-48-8	M1
Sulfate	**298**	mg/L	6.0	3.0	6		09/30/20 02:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWC-107 **Lab ID: 92496524013** Collected: 09/24/20 16:56 Received: 09/25/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		09/29/20 12:28		
pH	**6.11**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**55.4**	mg/L	1.0	0.070	1	09/29/20 18:44	10/01/20 18:10	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	09/30/20 17:45	10/01/20 21:56	7440-38-2	
Barium	**0.039**	mg/L	0.010	0.00071	1	09/30/20 17:45	10/01/20 21:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/30/20 17:45	10/01/20 21:56	7440-41-7	
Boron	**0.88**	mg/L	0.10	0.0052	1	09/30/20 17:45	10/01/20 21:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/30/20 17:45	10/01/20 21:56	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 17:45	10/01/20 21:56	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/30/20 17:45	10/01/20 21:56	7440-48-4	
Lead	**0.00034J**	mg/L	0.0050	0.000036	1	09/30/20 17:45	10/01/20 21:56	7439-92-1	
Lithium	**0.00098J**	mg/L	0.030	0.00081	1	09/30/20 17:45	10/01/20 21:56	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**253**	mg/L	10.0	10.0	1		09/30/20 09:29		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**3.5**	mg/L	1.0	0.60	1		09/29/20 21:08	16887-00-6	
Fluoride	**0.064J**	mg/L	0.10	0.050	1		09/29/20 21:08	16984-48-8	
Sulfate	**126**	mg/L	3.0	1.5	3		09/30/20 03:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWC-109 **Lab ID: 92496524014** Collected: 09/25/20 16:20 Received: 09/28/20 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		09/29/20 12:28		
pH	**6.79**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**48.5**	mg/L	1.0	0.070	1	10/01/20 15:00	10/02/20 20:24	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	**0.0017J**	mg/L	0.0050	0.00078	1	10/01/20 19:00	10/03/20 16:48	7440-38-2	
Barium	**0.085**	mg/L	0.010	0.00071	1	10/01/20 19:00	10/03/20 16:48	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/01/20 19:00	10/03/20 16:48	7440-41-7	
Boron	**0.28**	mg/L	0.10	0.0052	1	10/01/20 19:00	10/03/20 16:48	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/01/20 19:00	10/03/20 16:48	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	10/01/20 19:00	10/03/20 16:48	7440-47-3	
Cobalt	**0.0010J**	mg/L	0.0050	0.00038	1	10/01/20 19:00	10/03/20 16:48	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/01/20 19:00	10/03/20 16:48	7439-92-1	
Lithium	**0.0010J**	mg/L	0.030	0.00081	1	10/01/20 19:00	10/03/20 16:48	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**188**	mg/L	10.0	10.0	1		10/01/20 15:26		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**4.1**	mg/L	1.0	0.60	1		09/30/20 11:19	16887-00-6	
Fluoride	**0.091J**	mg/L	0.10	0.050	1		09/30/20 11:19	16984-48-8	
Sulfate	**24.7**	mg/L	1.0	0.50	1		09/30/20 11:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWC-117 **Lab ID: 92496524015** Collected: 09/25/20 16:25 Received: 09/28/20 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		09/29/20 12:28		
pH	**6.01**	Std. Units			1		09/29/20 12:28		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**72.8**	mg/L	1.0	0.070	1	10/01/20 18:49	10/05/20 19:01	7440-70-2	M1
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	10/01/20 19:00	10/03/20 16:54	7440-38-2	
Barium	**0.050**	mg/L	0.010	0.00071	1	10/01/20 19:00	10/03/20 16:54	7440-39-3	
Beryllium	**0.000066J**	mg/L	0.0030	0.000046	1	10/01/20 19:00	10/03/20 16:54	7440-41-7	
Boron	**1.1**	mg/L	0.10	0.0052	1	10/01/20 19:00	10/03/20 16:54	7440-42-8	
Cadmium	**0.00089J**	mg/L	0.0025	0.00012	1	10/01/20 19:00	10/03/20 16:54	7440-43-9	
Chromium	**0.00067J**	mg/L	0.010	0.00055	1	10/01/20 19:00	10/03/20 16:54	7440-47-3	
Cobalt	**0.011**	mg/L	0.0050	0.00038	1	10/01/20 19:00	10/03/20 16:54	7440-48-4	
Lead	**0.00019J**	mg/L	0.0050	0.000036	1	10/01/20 19:00	10/03/20 16:54	7439-92-1	
Lithium	**0.0031J**	mg/L	0.030	0.00081	1	10/01/20 19:00	10/03/20 16:54	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**340**	mg/L	10.0	10.0	1		10/01/20 15:26		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**16.1**	mg/L	1.0	0.60	1		09/30/20 11:33	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/30/20 11:33	16984-48-8	
Sulfate	**146**	mg/L	3.0	1.5	3		09/30/20 19:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Sample: HGWC-118 **Lab ID: 92496524016** Collected: 09/28/20 12:56 Received: 09/29/20 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		09/29/20 13:39		
pH	**7.03**	Std. Units			1		09/29/20 13:39		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**88.9**	mg/L	1.0	0.070	1	10/01/20 18:49	10/05/20 19:23	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/06/20 17:55	7440-38-2	
Barium	**0.046**	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 17:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 17:55	7440-41-7	
Boron	**0.65**	mg/L	0.10	0.0052	1	10/02/20 15:00	10/06/20 17:55	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 17:55	7440-43-9	
Chromium	**0.0017J**	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 17:55	7440-47-3	
Cobalt	**0.00048J**	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 17:55	7440-48-4	
Lead	**0.00022J**	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 17:55	7439-92-1	
Lithium	**0.0022J**	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 17:55	7439-93-2	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**332**	mg/L	10.0	10.0	1		10/01/20 15:27		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**4.0**	mg/L	1.0	0.60	1		10/01/20 15:23	16887-00-6	
Fluoride	**0.078J**	mg/L	0.10	0.050	1		10/01/20 15:23	16984-48-8	
Sulfate	**86.0**	mg/L	1.0	0.50	1		10/01/20 15:23	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568426
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524001, 92496524002, 92496524003, 92496524004, 92496524005

METHOD BLANK: 3011664 Matrix: Water
Associated Lab Samples: 92496524001, 92496524002, 92496524003, 92496524004, 92496524005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/24/20 18:01	

LABORATORY CONTROL SAMPLE: 3011665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.92J	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011666 3011667

Parameter	Units	92495870006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	2.8	1	1	3.6	3.5	85	71	75-125	4	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011668 3011669

Parameter	Units	92495870007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	14.3	1	1	33.9	34.3	1960	2000	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568748
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524006, 92496524007

METHOD BLANK: 3013298 Matrix: Water
Associated Lab Samples: 92496524006, 92496524007

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

LABORATORY CONTROL SAMPLE: 3013299

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013300 3013301

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

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569777
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524008, 92496524009, 92496524010, 92496524011, 92496524012, 92496524013

METHOD BLANK: 3018389 Matrix: Water
Associated Lab Samples: 92496524008, 92496524009, 92496524010, 92496524011, 92496524012, 92496524013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	10/01/20 16:18	

LABORATORY CONTROL SAMPLE: 3018390

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.99J	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018391 3018392

Parameter	Units	92496914014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	36.9	1	1	39.2	39.8	237	295	75-125	1	20	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570301
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524014

METHOD BLANK: 3020964 Matrix: Water
Associated Lab Samples: 92496524014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	10/02/20 18:13	

LABORATORY CONTROL SAMPLE: 3020965

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020966 3020967

Parameter	Units	92497149010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	38.6	1	1	37.8	39.0	-77	45	75-125	3	20	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570395
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524015, 92496524016

METHOD BLANK: 3021771 Matrix: Water
Associated Lab Samples: 92496524015, 92496524016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	10/05/20 18:52	

LABORATORY CONTROL SAMPLE: 3021772

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: 3021773 3021774

Parameter	Units	92496524015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	72.8	1	1	73.5	75.1	70	232	75-125	2	20	M1

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568749
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524001, 92496524002, 92496524003, 92496524004, 92496524005

METHOD BLANK: 3013302 Matrix: Water
Associated Lab Samples: 92496524001, 92496524002, 92496524003, 92496524004, 92496524005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/25/20 18:19	
Arsenic	mg/L	ND	0.0050	0.00078	09/25/20 18:19	
Barium	mg/L	ND	0.010	0.00071	09/25/20 18:19	
Beryllium	mg/L	ND	0.0030	0.000046	09/25/20 18:19	
Boron	mg/L	ND	0.10	0.0052	09/25/20 18:19	
Cadmium	mg/L	ND	0.0025	0.00012	09/25/20 18:19	
Chromium	mg/L	ND	0.010	0.00055	09/25/20 18:19	
Cobalt	mg/L	ND	0.0050	0.00038	09/25/20 18:19	
Lead	mg/L	ND	0.0050	0.000036	09/25/20 18:19	
Lithium	mg/L	ND	0.030	0.00081	09/25/20 18:19	
Molybdenum	mg/L	ND	0.010	0.00069	09/25/20 18:19	
Selenium	mg/L	ND	0.010	0.0016	09/25/20 18:19	
Thallium	mg/L	ND	0.0010	0.00014	09/25/20 18:19	

LABORATORY CONTROL SAMPLE: 3013303

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	0.098	98	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013304 3013305

Parameter	Units	92495894014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	104	108	75-125	4	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.11	101	106	75-125	5	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013304 3013305

Parameter	Units	92495894014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.099	0.1	0.1	0.18	0.19	85	89	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.096	0.099	96	99	75-125	4	20	
Boron	mg/L	2.0	1	1	3.0	3.1	102	106	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.097	0.10	97	104	75-125	7	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.11	101	108	75-125	7	20	
Cobalt	mg/L	ND	0.1	0.1	0.098	0.10	98	101	75-125	4	20	
Lead	mg/L	ND	0.1	0.1	0.097	0.10	97	101	75-125	4	20	
Lithium	mg/L	0.0032J	0.1	0.1	0.095	0.099	92	96	75-125	4	20	
Molybdenum	mg/L	0.014	0.1	0.1	0.12	0.12	105	109	75-125	4	20	
Selenium	mg/L	ND	0.1	0.1	0.097	0.10	97	103	75-125	7	20	
Thallium	mg/L	ND	0.1	0.1	0.094	0.099	94	99	75-125	5	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569670
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524006, 92496524007

METHOD BLANK: 3017842 Matrix: Water
Associated Lab Samples: 92496524006, 92496524007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00078	09/30/20 17:26	
Barium	mg/L	ND	0.010	0.00071	09/30/20 17:26	
Beryllium	mg/L	ND	0.0030	0.000046	09/30/20 17:26	
Boron	mg/L	ND	0.10	0.0052	09/30/20 17:26	
Cadmium	mg/L	ND	0.0025	0.00012	09/30/20 17:26	
Chromium	mg/L	ND	0.010	0.00055	09/30/20 17:26	
Cobalt	mg/L	ND	0.0050	0.00038	09/30/20 17:26	
Lead	mg/L	ND	0.0050	0.000036	09/30/20 17:26	
Lithium	mg/L	ND	0.030	0.00081	09/30/20 17:26	

LABORATORY CONTROL SAMPLE: 3017843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.095	95	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	0.98	98	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.095	95	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017844 3017845

Parameter	Units	92495894020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.39	0.1	0.1	0.48	0.48	88	90	75-125	1	20	
Barium	mg/L	0.052	0.1	0.1	0.15	0.15	98	101	75-125	2	20	
Beryllium	mg/L	0.00011J	0.1	0.1	0.087	0.090	87	90	75-125	4	20	
Boron	mg/L	1.6	1	1	2.4	2.5	79	89	75-125	4	20	
Cadmium	mg/L	ND	0.1	0.1	0.094	0.094	94	94	75-125	0	20	
Chromium	mg/L	0.00056J	0.1	0.1	0.093	0.094	93	93	75-125	1	20	
Cobalt	mg/L	0.0032J	0.1	0.1	0.094	0.096	91	92	75-125	2	20	
Lead	mg/L	0.00015J	0.1	0.1	0.093	0.093	93	92	75-125	0	20	
Lithium	mg/L	0.028J	0.1	0.1	0.12	0.12	87	89	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570006
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524008, 92496524009

METHOD BLANK: 3019444 Matrix: Water
Associated Lab Samples: 92496524008, 92496524009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/01/20 18:07	
Arsenic	mg/L	ND	0.0050	0.00078	10/01/20 18:07	
Barium	mg/L	ND	0.010	0.00071	10/01/20 18:07	
Beryllium	mg/L	ND	0.0030	0.000046	10/01/20 18:07	
Boron	mg/L	ND	0.10	0.0052	10/01/20 18:07	
Cadmium	mg/L	ND	0.0025	0.00012	10/01/20 18:07	
Chromium	mg/L	ND	0.010	0.00055	10/01/20 18:07	
Cobalt	mg/L	ND	0.0050	0.00038	10/01/20 18:07	
Lead	mg/L	ND	0.0050	0.000036	10/01/20 18:07	
Lithium	mg/L	ND	0.030	0.00081	10/01/20 18:07	
Molybdenum	mg/L	ND	0.010	0.00069	10/01/20 18:07	
Selenium	mg/L	ND	0.010	0.0016	10/01/20 18:07	
Thallium	mg/L	ND	0.0010	0.00014	10/01/20 18:07	

LABORATORY CONTROL SAMPLE: 3019445

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.092	92	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.095	95	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	0.95	95	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.095	95	80-120	
Cobalt	mg/L	0.1	0.094	94	80-120	
Lead	mg/L	0.1	0.094	94	80-120	
Lithium	mg/L	0.1	0.094	94	80-120	
Molybdenum	mg/L	0.1	0.093	93	80-120	
Selenium	mg/L	0.1	0.10	105	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019446 3019447

Parameter	Units	92496914011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	0.00080J	0.1	0.1	0.096	0.098	95	97	75-125	2	20	
Arsenic	mg/L	0.0064	0.1	0.1	0.10	0.11	98	101	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019446 3019447

Parameter	Units	92496914011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.11	0.1	0.1	0.20	0.21	97	99	75-125	1	20	
Beryllium	mg/L	0.000050J	0.1	0.1	0.095	0.095	95	95	75-125	1	20	
Boron	mg/L	0.045J	1	1	0.96	0.95	92	91	75-125	1	20	
Cadmium	mg/L	ND	0.1	0.1	0.098	0.10	98	101	75-125	3	20	
Chromium	mg/L	ND	0.1	0.1	0.095	0.096	95	95	75-125	0	20	
Cobalt	mg/L	0.010	0.1	0.1	0.11	0.11	95	97	75-125	2	20	
Lead	mg/L	0.000060J	0.1	0.1	0.094	0.095	94	95	75-125	1	20	
Lithium	mg/L	0.025J	0.1	0.1	0.12	0.12	91	92	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.094	0.096	94	95	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	102	104	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570088
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524010, 92496524011, 92496524012, 92496524013

METHOD BLANK: 3020035 Matrix: Water
Associated Lab Samples: 92496524010, 92496524011, 92496524012, 92496524013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00078	10/01/20 21:10	
Barium	mg/L	ND	0.010	0.00071	10/01/20 21:10	
Beryllium	mg/L	ND	0.0030	0.000046	10/01/20 21:10	
Boron	mg/L	ND	0.10	0.0052	10/01/20 21:10	
Cadmium	mg/L	ND	0.0025	0.00012	10/01/20 21:10	
Chromium	mg/L	ND	0.010	0.00055	10/01/20 21:10	
Cobalt	mg/L	ND	0.0050	0.00038	10/01/20 21:10	
Lead	mg/L	ND	0.0050	0.000036	10/01/20 21:10	
Lithium	mg/L	ND	0.030	0.00081	10/01/20 21:10	

LABORATORY CONTROL SAMPLE: 3020036

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.10	104	80-120	
Lithium	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020037 3020038

Parameter	Units	92496524010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	0.1	0.1	0.098	0.099	97	99	75-125	1	20	
Barium	mg/L	0.036	0.1	0.1	0.14	0.14	102	104	75-125	2	20	
Beryllium	mg/L	0.000088J	0.1	0.1	0.093	0.094	93	94	75-125	1	20	
Boron	mg/L	2.2	1	1	3.3	3.3	108	107	75-125	0	20	
Cadmium	mg/L	0.00076J	0.1	0.1	0.094	0.096	93	95	75-125	2	20	
Chromium	mg/L	0.00081J	0.1	0.1	0.096	0.099	96	98	75-125	3	20	
Cobalt	mg/L	0.0019J	0.1	0.1	0.096	0.099	94	97	75-125	3	20	
Lead	mg/L	0.00028J	0.1	0.1	0.095	0.098	95	97	75-125	2	20	
Lithium	mg/L	0.0017J	0.1	0.1	0.093	0.095	92	93	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570375
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524014, 92496524015

METHOD BLANK: 3021668 Matrix: Water
Associated Lab Samples: 92496524014, 92496524015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00078	10/03/20 14:31	
Barium	mg/L	ND	0.010	0.00071	10/03/20 14:31	
Beryllium	mg/L	ND	0.0030	0.000046	10/03/20 14:31	
Boron	mg/L	ND	0.10	0.0052	10/03/20 14:31	
Cadmium	mg/L	ND	0.0025	0.00012	10/03/20 14:31	
Chromium	mg/L	ND	0.010	0.00055	10/03/20 14:31	
Cobalt	mg/L	ND	0.0050	0.00038	10/03/20 14:31	
Lead	mg/L	ND	0.0050	0.000036	10/03/20 14:31	
Lithium	mg/L	ND	0.030	0.00081	10/03/20 14:31	

LABORATORY CONTROL SAMPLE: 3021669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.092	92	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.095	95	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3021670 3021671

Parameter	Units	92497125010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	0.1	0.1	0.095	0.094	94	94	75-125	1	20	
Barium	mg/L	0.023	0.1	0.1	0.12	0.12	97	99	75-125	1	20	
Beryllium	mg/L	0.0015J	0.1	0.1	0.098	0.10	97	100	75-125	3	20	
Boron	mg/L	1.1	1	1	2.1	2.2	101	114	75-125	6	20	
Cadmium	mg/L	0.00066J	0.1	0.1	0.097	0.097	96	97	75-125	0	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	100	101	75-125	1	20	
Cobalt	mg/L	0.0053	0.1	0.1	0.10	0.10	98	99	75-125	1	20	
Lead	mg/L	0.00011J	0.1	0.1	0.095	0.095	95	95	75-125	1	20	
Lithium	mg/L	0.0010J	0.1	0.1	0.10	0.10	100	103	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

SAMPLE DUPLICATE: 3021683

Parameter	Units	92497981001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic	mg/L	ND	0.0078	4	20	
Barium	mg/L	ND	0.0046J		20	
Beryllium	mg/L	ND	ND		20	
Boron	mg/L	ND	0.018J		20	
Cadmium	mg/L	ND	ND		20	
Chromium	mg/L	ND	0.00061J		20	
Cobalt	mg/L	ND	0.00074J		20	
Lead	mg/L	ND	0.00016J		20	
Lithium	mg/L	ND	ND		20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570626
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92496524016

METHOD BLANK: 3022872 Matrix: Water
Associated Lab Samples: 92496524016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00078	10/06/20 17:21	
Barium	mg/L	ND	0.010	0.00071	10/06/20 17:21	
Beryllium	mg/L	ND	0.0030	0.000046	10/06/20 17:21	
Boron	mg/L	ND	0.10	0.0052	10/06/20 17:21	
Cadmium	mg/L	ND	0.0025	0.00012	10/06/20 17:21	
Chromium	mg/L	ND	0.010	0.00055	10/06/20 17:21	
Cobalt	mg/L	ND	0.0050	0.00038	10/06/20 17:21	
Lead	mg/L	ND	0.0050	0.000036	10/06/20 17:21	
Lithium	mg/L	ND	0.030	0.00081	10/06/20 17:21	

LABORATORY CONTROL SAMPLE: 3022873

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.096	96	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	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3022874 3022875

Parameter	Units	92496914020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	2	20	
Barium	mg/L	0.15	0.1	0.1	0.25	0.25	102	99	75-125	1	20	
Beryllium	mg/L	0.00010J	0.1	0.1	0.095	0.096	95	96	75-125	1	20	
Boron	mg/L	0.17	1	1	1.1	1.1	94	95	75-125	1	20	
Cadmium	mg/L	ND	0.1	0.1	0.095	0.097	95	97	75-125	2	20	
Chromium	mg/L	0.00063J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.099	97	98	75-125	1	20	
Lead	mg/L	0.00014J	0.1	0.1	0.094	0.096	94	96	75-125	2	20	
Lithium	mg/L	0.019J	0.1	0.1	0.11	0.11	92	96	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568007
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524003, 92496524004, 92496524005

METHOD BLANK: 3009608 Matrix: Water
Associated Lab Samples: 92496524003, 92496524004, 92496524005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	09/23/20 09:49	

LABORATORY CONTROL SAMPLE: 3009609

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: 3009610 3009611

Parameter	Units	92496278002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0025	95	99	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569307
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524008

METHOD BLANK: 3016316 Matrix: Water
Associated Lab Samples: 92496524008

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

LABORATORY CONTROL SAMPLE: 3016317

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: 3016318 3016319

Parameter	Units	92497532001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0025	0.0025	101	99	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568395
QC Batch Method: SM 2450C-2011
Analysis Method: SM 2450C-2011
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524001, 92496524002, 92496524003, 92496524004, 92496524005

METHOD BLANK: 3011476 Matrix: Water
Associated Lab Samples: 92496524001, 92496524002, 92496524003, 92496524004, 92496524005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/23/20 13:15	

LABORATORY CONTROL SAMPLE: 3011477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	375	94	84-108	

SAMPLE DUPLICATE: 3011478

Parameter	Units	92495894018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	382	404	6	10	

SAMPLE DUPLICATE: 3011479

Parameter	Units	92495870020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	93.0	91.0	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568648
QC Batch Method: SM 2450C-2011
Analysis Method: SM 2450C-2011
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524006, 92496524007

METHOD BLANK: 3012738 Matrix: Water
Associated Lab Samples: 92496524006, 92496524007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/24/20 10:26	

LABORATORY CONTROL SAMPLE: 3012739

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	390	98	84-108	

SAMPLE DUPLICATE: 3012740

Parameter	Units	92497007001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	207	204	1	10	

SAMPLE DUPLICATE: 3012944

Parameter	Units	92496771001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	158	157	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569874 | Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524008, 92496524009, 92496524010, 92496524011, 92496524012, 92496524013

METHOD BLANK: 3018862 Matrix: Water
Associated Lab Samples: 92496524008, 92496524009, 92496524010, 92496524011, 92496524012, 92496524013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/30/20 09:26	

LABORATORY CONTROL SAMPLE: 3018863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	389	97	84-108	

SAMPLE DUPLICATE: 3018864

Parameter	Units	92497404001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	130	150	14	10	D6

SAMPLE DUPLICATE: 3018865

Parameter	Units	92495894026 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	790	774	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570220
QC Batch Method: SM 2450C-2011
Analysis Method: SM 2450C-2011
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92496524014, 92496524015, 92496524016

METHOD BLANK: 3020462 Matrix: Water
Associated Lab Samples: 92496524014, 92496524015, 92496524016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/01/20 15:26	

LABORATORY CONTROL SAMPLE: 3020463

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	411	103	84-108	

SAMPLE DUPLICATE: 3020464

Parameter	Units	92496524014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	188	205	9	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568377
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92496524001, 92496524002, 92496524003, 92496524004, 92496524005

METHOD BLANK: 3011350 Matrix: Water
Associated Lab Samples: 92496524001, 92496524002, 92496524003, 92496524004, 92496524005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/24/20 06:58	
Fluoride	mg/L	ND	0.10	0.050	09/24/20 06:58	
Sulfate	mg/L	ND	1.0	0.50	09/24/20 06:58	

LABORATORY CONTROL SAMPLE: 3011351

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	2.6	102	90-110	
Sulfate	mg/L	50	50.1	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011352 3011353

Parameter	Units	92495656005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.9	50	50	55.8	56.2	108	109	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.8	2.8	109	110	90-110	1	10	
Sulfate	mg/L	5.9	50	50	59.3	59.6	107	108	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011354 3011355

Parameter	Units	92496524001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.6	50	50	56.8	57.6	108	110	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.7	2.8	108	110	90-110	2	10	
Sulfate	mg/L	1.0	50	50	54.0	54.8	106	108	90-110	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568980
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92496524006

METHOD BLANK: 3014524 Matrix: Water
Associated Lab Samples: 92496524006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/25/20 15:28	
Fluoride	mg/L	ND	0.10	0.050	09/25/20 15:28	
Sulfate	mg/L	ND	1.0	0.50	09/25/20 15:28	

LABORATORY CONTROL SAMPLE: 3014525

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.0	106	90-110	
Fluoride	mg/L	2.5	2.7	108	90-110	
Sulfate	mg/L	50	53.2	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3014526 3014527

Parameter	Units	92496890001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	31.5	50	50	84.6	84.7	106	106	90-110	0	10	
Fluoride	mg/L	0.19	2.5	2.5	2.9	2.9	108	108	90-110	0	10	
Sulfate	mg/L	23.8	50	50	77.4	77.5	107	107	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3014528 3014529

Parameter	Units	92496895002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	66.1	50	50	122	123	113	113	90-110	0	10	M1
Fluoride	mg/L	0.38	2.5	2.5	3.0	3.1	106	107	90-110	1	10	
Sulfate	mg/L	47.6	50	50	91.1	91.4	87	88	90-110	0	10	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569204
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92496524007

METHOD BLANK: 3015915 Matrix: Water
Associated Lab Samples: 92496524007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/26/20 18:53	
Fluoride	mg/L	ND	0.10	0.050	09/26/20 18:53	
Sulfate	mg/L	ND	1.0	0.50	09/26/20 18:53	

LABORATORY CONTROL SAMPLE: 3015916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.3	107	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	52.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3015917 3015918

Parameter	Units	92497425005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L		50	50	61.6	57.4	107	98	90-110	7	10	
Fluoride	mg/L		2.5	2.5	2.7	2.6	108	103	90-110	5	10	
Sulfate	mg/L	4.1	50	50	56.2	55.8	104	103	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3015919 3015920

Parameter	Units	92497391003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.8	50	50	61.1	61.5	104	105	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.3	2.3	91	92	90-110	1	10	
Sulfate	mg/L	0.73J	50	50	52.1	53.1	103	105	90-110	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569516
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92496524008, 92496524009, 92496524010, 92496524011

METHOD BLANK: 3017410 Matrix: Water
Associated Lab Samples: 92496524008, 92496524009, 92496524010, 92496524011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/29/20 08:53	
Fluoride	mg/L	ND	0.10	0.050	09/29/20 08:53	
Sulfate	mg/L	ND	1.0	0.50	09/29/20 08:53	

LABORATORY CONTROL SAMPLE: 3017411

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	54.8	110	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	54.9	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017412 3017413

Parameter	Units	92497532015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	52.8	52.1	106	104	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	106	104	90-110	1	10	
Sulfate	mg/L	ND	50	50	52.5	52.0	105	104	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017414 3017415

Parameter	Units	92495894027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	52.5	52.9	105	105	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	105	104	90-110	1	10	
Sulfate	mg/L	ND	50	50	52.1	52.0	104	104	90-110	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569577
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92496524012, 92496524013

METHOD BLANK: 3017567 Matrix: Water
Associated Lab Samples: 92496524012, 92496524013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/29/20 17:37	
Fluoride	mg/L	ND	0.10	0.050	09/29/20 17:37	
Sulfate	mg/L	ND	1.0	0.50	09/29/20 17:37	

LABORATORY CONTROL SAMPLE: 3017568

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.9	102	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	50.7	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017569 3017570

Parameter	Units	92496524012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.9	50	50	59.8	60.2	102	103	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.2	2.5	89	99	90-110	10	10	M1
Sulfate	mg/L	298	50	50	347	351	98	106	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017571 3017572

Parameter	Units	92497532021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	449	50	50	491	491	85	84	90-110	0	10	M6
Fluoride	mg/L	0.097J	2.5	2.5	2.6	2.6	100	101	90-110	2	10	
Sulfate	mg/L	393	50	50	441	441	97	98	90-110	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569831
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92496524014, 92496524015

METHOD BLANK: 3018763 Matrix: Water
Associated Lab Samples: 92496524014, 92496524015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/30/20 10:50	
Fluoride	mg/L	ND	0.10	0.050	09/30/20 10:50	
Sulfate	mg/L	ND	1.0	0.50	09/30/20 10:50	

LABORATORY CONTROL SAMPLE: 3018764

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.8	108	90-110	
Fluoride	mg/L	2.5	2.7	110	90-110	
Sulfate	mg/L	50	53.1	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018765 3018766

Parameter	Units	92496574018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	52.4	52.1	105	104	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	105	104	90-110	1	10	
Sulfate	mg/L	ND	50	50	52.1	51.8	104	104	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018767 3018768

Parameter	Units	92496941026 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	52.0	51.8	104	104	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	104	104	90-110	0	10	
Sulfate	mg/L	ND	50	50	51.7	51.4	103	103	90-110	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570137
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92496524016

METHOD BLANK: 3020267 Matrix: Water
Associated Lab Samples: 92496524016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/01/20 07:56	
Fluoride	mg/L	ND	0.10	0.050	10/01/20 07:56	
Sulfate	mg/L	ND	1.0	0.50	10/01/20 07:56	

LABORATORY CONTROL SAMPLE: 3020268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.3	107	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	53.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020269 3020270

Parameter	Units	92495894028 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	542	50	50	583	587	82	89	90-110	1	10	M6
Fluoride	mg/L	0.41	2.5	2.5	3.2	3.1	110	109	90-110	1	10	
Sulfate	mg/L	3480	50	50	3520	3530	86	111	90-110	0	10	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020271 3020272

Parameter	Units	92496914018 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	56.0	56.5	109	110	90-110	1	10	
Fluoride	mg/L	0.063J	2.5	2.5	2.8	2.8	109	111	90-110	2	10	M1
Sulfate	mg/L	110	50	50	160	161	101	103	90-110	1	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92496524001	**HGWA-111**				
92496524002	**HGWA-112**				
92496524003	**HGWA-47**				
92496524004	**HGWA-48D**				
92496524006	**HGWA-113**				
92496524007	**HGWA-113 FILTERED**				
92496524008	**HGWC-102**				
92496524009	**HGWC-101**				
92496524010	**HGWC-103**				
92496524011	**HGWC-105**				
92496524013	**HGWC-107**				
92496524014	**HGWC-109**				
92496524015	**HGWC-117**				
92496524016	**HGWC-118**				
92496524001	**HGWA-111**	EPA 3010A	568426	EPA 6010D	568661
92496524002	**HGWA-112**	EPA 3010A	568426	EPA 6010D	568661
92496524003	**HGWA-47**	EPA 3010A	568426	EPA 6010D	568661
92496524004	**HGWA-48D**	EPA 3010A	568426	EPA 6010D	568661
92496524005	**FB-04**	EPA 3010A	568426	EPA 6010D	568661
92496524006	**HGWA-113**	EPA 3010A	568748	EPA 6010D	568812
92496524007	**HGWA-113 FILTERED**	EPA 3010A	568748	EPA 6010D	568812
92496524008	**HGWC-102**	EPA 3010A	569777	EPA 6010D	569816
92496524009	**HGWC-101**	EPA 3010A	569777	EPA 6010D	569816
92496524010	**HGWC-103**	EPA 3010A	569777	EPA 6010D	569816
92496524011	**HGWC-105**	EPA 3010A	569777	EPA 6010D	569816
92496524012	**FD-04**	EPA 3010A	569777	EPA 6010D	569816
92496524013	**HGWC-107**	EPA 3010A	569777	EPA 6010D	569816
92496524014	**HGWC-109**	EPA 3010A	570301	EPA 6010D	570373
92496524015	**HGWC-117**	EPA 3010A	570395	EPA 6010D	570414
92496524016	**HGWC-118**	EPA 3010A	570395	EPA 6010D	570414
92496524001	**HGWA-111**	EPA 3005A	568749	EPA 6020B	568811
92496524002	**HGWA-112**	EPA 3005A	568749	EPA 6020B	568811
92496524003	**HGWA-47**	EPA 3005A	568749	EPA 6020B	568811
92496524004	**HGWA-48D**	EPA 3005A	568749	EPA 6020B	568811
92496524005	**FB-04**	EPA 3005A	568749	EPA 6020B	568811
92496524006	**HGWA-113**	EPA 3005A	569670	EPA 6020B	569718
92496524007	**HGWA-113 FILTERED**	EPA 3005A	569670	EPA 6020B	569718
92496524008	**HGWC-102**	EPA 3005A	570006	EPA 6020B	570052
92496524009	**HGWC-101**	EPA 3005A	570006	EPA 6020B	570052
92496524010	**HGWC-103**	EPA 3005A	570088	EPA 6020B	570109
92496524011	**HGWC-105**	EPA 3005A	570088	EPA 6020B	570109
92496524012	**FD-04**	EPA 3005A	570088	EPA 6020B	570109
92496524013	**HGWC-107**	EPA 3005A	570088	EPA 6020B	570109
92496524014	**HGWC-109**	EPA 3005A	570375	EPA 6020B	570411

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92496524015	**HGWC-117**	EPA 3005A	570375	EPA 6020B	570411
92496524016	**HGWC-118**	EPA 3005A	570626	EPA 6020B	570683
92496524003	**HGWA-47**	EPA 7470A	568007	EPA 7470A	568119
92496524004	**HGWA-48D**	EPA 7470A	568007	EPA 7470A	568119
92496524005	**FB-04**	EPA 7470A	568007	EPA 7470A	568119
92496524008	**HGWC-102**	EPA 7470A	569307	EPA 7470A	569460
92496524001	**HGWA-111**	SM 2450C-2011	568395		
92496524002	**HGWA-112**	SM 2450C-2011	568395		
92496524003	**HGWA-47**	SM 2450C-2011	568395		
92496524004	**HGWA-48D**	SM 2450C-2011	568395		
92496524005	**FB-04**	SM 2450C-2011	568395		
92496524006	**HGWA-113**	SM 2450C-2011	568648		
92496524007	**HGWA-113 FILTERED**	SM 2450C-2011	568648		
92496524008	**HGWC-102**	SM 2450C-2011	569874		
92496524009	**HGWC-101**	SM 2450C-2011	569874		
92496524010	**HGWC-103**	SM 2450C-2011	569874		
92496524011	**HGWC-105**	SM 2450C-2011	569874		
92496524012	**FD-04**	SM 2450C-2011	569874		
92496524013	**HGWC-107**	SM 2450C-2011	569874		
92496524014	**HGWC-109**	SM 2450C-2011	570220		
92496524015	**HGWC-117**	SM 2450C-2011	570220		
92496524016	**HGWC-118**	SM 2450C-2011	570220		
92496524001	**HGWA-111**	EPA 300.0 Rev 2.1 1993	568377		
92496524002	**HGWA-112**	EPA 300.0 Rev 2.1 1993	568377		
92496524003	**HGWA-47**	EPA 300.0 Rev 2.1 1993	568377		
92496524004	**HGWA-48D**	EPA 300.0 Rev 2.1 1993	568377		
92496524005	**FB-04**	EPA 300.0 Rev 2.1 1993	568377		
92496524006	**HGWA-113**	EPA 300.0 Rev 2.1 1993	568980		
92496524007	**HGWA-113 FILTERED**	EPA 300.0 Rev 2.1 1993	569204		
92496524008	**HGWC-102**	EPA 300.0 Rev 2.1 1993	569516		
92496524009	**HGWC-101**	EPA 300.0 Rev 2.1 1993	569516		
92496524010	**HGWC-103**	EPA 300.0 Rev 2.1 1993	569516		
92496524011	**HGWC-105**	EPA 300.0 Rev 2.1 1993	569516		
92496524012	**FD-04**	EPA 300.0 Rev 2.1 1993	569577		
92496524013	**HGWC-107**	EPA 300.0 Rev 2.1 1993	569577		
92496524014	**HGWC-109**	EPA 300.0 Rev 2.1 1993	569831		
92496524015	**HGWC-117**	EPA 300.0 Rev 2.1 1993	569831		
92496524016	**HGWC-118**	EPA 300.0 Rev 2.1 1993	570137		

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

WO# : 92496524

92496524

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Tracking #: _____

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

Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

Thermometer Used 214

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

Cooler Temperature 3.6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/21/2009

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	☑Yes	☐No	☐N/A
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A
Sufficient Volume:	☑Yes	☐No	☐N/A
Correct Containers Used:	☑Yes	☐No	☐N/A
-Pace Containers Used:	☑Yes	☐No	☐N/A
Containers Intact:	☑Yes	☐No	☐N/A
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A
Sample Labels match COC:	☑Yes	☐No	☐N/A
-Includes date/time/ID/Analysis Matrix: W			
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A
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	☑No	

Initial when completed	Lot # of added preservative

Samples checked for dechlorination:	☐Yes	☐No	☑N/A
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A
Trip Blank Present:	☐Yes	☐No	☑N/A
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A
Pace Trip Blank Lot # (if purchased):			

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.

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)

F-ALLC003rev.3, 11September2006

CHAIN-OF-CUSTODY / Analytical Request Document

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Pace Analytical® www.pacelabs.com

Page: 1 ~~2~~ of ~~2~~ 3 (CO) (CR)

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	~~10839-4/10839-2~~ 10839-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes — MATRIX / CODE: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	TIME	Composite End/Grab DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate (N)	TDS (N)	App. III & IV Metals 6010/6020 (N)	RAD 226/228 (N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92496524
1	~~HGWC-102~~	~~WT~~	~~G~~			–	–		5	2		3							X	X	X	X	N	pH =
2	~~MW-47~~	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
3	~~MW-48D~~	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
4	~~FB-04~~	~~WT~~	~~G~~			–	–		5	2		3							X	X	X	X	N	
5	HGWA-111	WT	G	9/18	0443	–	–	22	5	2		3							X	X	X	X	N	pH = 6.46 001
6	HGWA-112	WT	G	9/18	1139	–	–	23	5	2		3							X	X	X	X	N	pH = 5.58 002
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.	Thomas Kessler / Geosyntec	9/18	1700	Chad [illegible] / geo	9/18	1700				
~~Full App. III & IV Metals: Sb, As, Ba, Be, B, Cd, Co, Cr, Co, Pb, Li, Hg, Mo, Se, Tl~~	[illegible] / geo	9/18	1920	Nalia Munley / geo	9/18/20	1920				
App III & IV Metals: As, Ba, Be, B, Cd, Ca, Cr, Co	Nalia Munley / geo	9/21/20	0925	[illegible] / Pace	9/21/20	926				
Pb, Li	[illegible] / Pace	9/21/20	1208	Charles [illegible]	9/21/20	1208	3.6	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas J. Kessler

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 09/18/20

*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

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CHAIN-OF-CUSTODY / Analytical Request Document

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2 3

Page: 1 of 2 (NM)

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-~~4/10839-2~~ (NM)

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (use valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	Full App. III & IV Metals 6010/6020	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N		
1	~~HGWG-102~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	N	~~pH=~~
2	MW-47	WT	G	09-18-20	1120	-	-	22	5	2		3							X	X	X	X	N	pH = 7.54 0.03
3	~~MW-48D~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	N	~~pH=~~
4	~~FB-04~~	~~WT~~	~~G~~			-	-		5	2		3							X	X	X	X	N	
5																								
6																								
7																								
8				11	09-18-202																			
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	VAISHISH TAVKOOR / GEOSYNTEC	09-18-20	1645	Chad Rutter / geo	9/18	1645				
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Chad Rutter / geo	9/18	1920	Nadia Mankoo / geo	9/19/20	1920				
	Nadia Mankoo / geo	9/21/20	0925	[illegible] / Pace	9/21/20	925				
	[illegible] / Pace	9/21/20	1208	Brooke Hentz	9/21/20	1208	3.6	Y	N	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: VAISHISH TAVKOOR

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 9-18-20

*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.

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Page: 3 of 3

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:	
				Address:	
Email To:	SCS Contacts	Purchase Order No.:		Pace Quote Reference:	
Phone:	Fax:	Project Name:	Plant Hammond AP-4 Semiannual/BKG 08	Pace Project Manager:	Kevin Herring
Requested Due Date/TAT:	10 Day	Project Number:	GW6581	Pace Profile #:	10839-4/~~10839-2~~

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Chloride, Fluoride, Sulfate N; TDS N; Full App. III & IV Metals 6010/6020/ N; RAD 226/228 N

Pace Project No./ Lab I.D.: 92496524

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	Full App. III & IV Metals 6010/6020/	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~HGWC-102~~	WT	G				–		5	2		3							X	X	X	X	N	pH =
2	~~MW-47~~	WT	G						5	2		3							X	X	X	X	N	pH =
3	MW-48D	WT	G	9/18	1106	–	–	23	5	2		3							X	X	X	X	N	pH = 7.50 004
4	FB-04	WT	G	9/18	1640	–	–	–	5	2		3							X	X	X	X	N	005
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

(ER) 9/18/2020

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please note dry wells, stake thorugh any wells not sampled, and note when the last sample for the event has been taken.	Chad Russo / Geo	9/18	1920	Marlia Munlyn / Geo	9/18/20	1920				
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Marlia Munlyn / Geo	9/21/20	0925	[illegible] / Pace	9/21/20	925				
	[illegible] / Pace	9/21/20	1208	[illegible]	9/21/20	1208	3.6	Y	N	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo DATE Signed (MM/DD/YY): 9/18/2020

*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

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Page: 1 of 1

Section A — Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts / nmuskus@geosyntec.com
Phone:	770 820 6838 — Fax:
Requested Due Date/TAT:	10 Day

Section B — Required Project Information:

Report To:	SCS Contacts — Noelia Muskus
Copy To:	Geosyntec Contacts
	1255 Roberts Blvd NW, Suite 200, Kennesaw, GA 30144
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C — Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-12

REGULATORY AGENCY

NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes — MATRIX / CODE: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): N N N N

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	Chloride, Fluoride, Sulfate	TDS	App III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./Lab I.D.
1	~~HGWA-111~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
2	~~HGWA-112~~	~~WT~~	~~G~~						~~6~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
3	HGWA-113	WT	G	9-22-20	1130	-	-	23	5	2		3							X	X	X	X	N	pH = 6.10 006
4	~~HGWC-101~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
5	~~HGWC-103~~	~~WT~~	~~G~~						~~6~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
6	~~HGWC-105~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
7	~~HGWC-107~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
8	~~HGWC-109~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
9	~~HGWC-117~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
10	~~HGWC-118~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
11	~~FD-04~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	
12	HGWA-113 FILTERED	WT	G	9-22-20	1245	-	-	23	5	2		3							X	X	X	X		pH = 6.10 007

Pace Project No./Lab I.D.: 92496524

ADDITIONAL COMMENTS

Please note dry wells, strike thorough any wells not sampled, and note when the last sample for the event has been taken.

*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Vashish Thukral / Geosyntec	9-22-20	1750	Chad Rugg / geo	9/22	1750				
Chad Rugg / geo	9/22	1855	Noelia Muskus / geo	9/22/20	1855				
Noelia Muskus / geo	9/23/20	0925	[signature] / Pace	9/23/20	925				
[signature] / Pace	9/23/20	1040	[signature]	9/23/20	1040	5.6	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Vashish Thukral

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 9-22-20

*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

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 3

Section A Required Client Information

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10838-4/10838-2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (use valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: Y/N	Chloride, Fluoride, Sulfate	TDS	Full App III & IV Metals 6010/6020	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N		92465 24
1	HGWC-102	WT	G	9/24	1651	--	--	19	5	2		3							X	X	X	X	N	pH = 5.92 008
2	~~MW-47~~	WT	G						5	2		3							X	X	X	X	N	pH =
3	~~MW-48D~~	WT	G						5	2		3							X	X	X	X	N	pH =
4	~~FB-04~~	WT	G			--	--		5	2		3							X	X	X	X	N	
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

9/24/2020

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.	Chad Russo/geo	9/24	2030	Nadia Mushtaq/geo	9/24/20	2030				
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Nadia Mushtaq/geo	9/25/20	1045	[illegible]/Pace	9/25/20	1045				
	[illegible]/Pace	9/25/20	1232	Charles Ferrell	9/25/20	1232	5.2	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo DATE Signed (MM/DD/YY): 9/24/2020

*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.

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 2 of 3

Section A Required Client Information:
- Company: GA Power
- Address: Atlanta, GA
- Email To: SCS Contacts
- Phone: | Fax:
- Requested Due Date/TAT: 10 Day

Section B Required Project Information:
- Report To: SCS Contacts
- Copy To: Geosyntec Contacts
- Purchase Order No.:
- Project Name: Plant Hammond AP-4 Semiannual/BKG 08
- Project Number: GW6581

Section C Invoice Information:
- Attention: Southern Co.
- Company Name:
- Address:
- Pace Quote Reference:
- Pace Project Manager: Kevin Herring
- Pace Profile #: 10839-12

REGULATORY AGENCY
- ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
- ☐ UST ☐ RCRA ☑ OTHER CCR
- Site Location STATE: GA

Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

Requested Analysis Filtered (Y/N): Chloride Fluoride Sulfate N; TDS N; App. III & IV Metals 6010/6020* N; RAD 226/228 N

Pace Project No./Lab I.D.: 92496524

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Chloride Fluoride Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./Lab I.D.
1	~~HGWA-111~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
2	~~HGWA-112~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
3	~~HGWA-113~~	WT	G						5	2		3						X	X	X	X	N	pH =
4	HGWC-101	WT	G	9-24-20	825	-	-	19	5	2		3						X	X	X	X	N	pH = 5.48 009
5	HGWC-103	WT	G	9-24-20	930	-	-	18	5	2		3						X	X	X	X	N	pH = 5.60 010
6	HGWC-105	WT	G	9-24-20	905	-	-	19	5	2		3						X	X	X	X	N	pH = 6.63 011
7	~~HGWC-107~~	WT	G	[illegible]					6	2		3						X	X	X	X	N	pH =
8	~~HGWC-109~~	WT	G						5	2		3						X	X	X	X	N	pH =
9	~~HGWC-117~~	WT	G						6	2		3						X	X	X	X	N	pH =
10	~~HGWC-118~~	WT	G			-	-		3	2		3						X	X	X	X	N	pH =
11	FD-04	WT	G	9-24-20	-		-		5	2		3						X	X	X	X	N	012
12																							

ADDITIONAL COMMENTS

Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.

*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
VASHISH TAKKAR / GEOSYNTEC	9-24-20	1530	[signature] / Geo	9/24	1730				
[signature] / GEO	9/24	2030	Marlia Munkin / Geo	9/24/20	2030				
Marlia Munkin / Geo	9/25/20	1045	[signature] / Pace	9/25/20	1045				
[signature] / Pace	9/25/20	1233	Charles Hinds	9/25/20	1233	5.2	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: VASHISH TAKKAR

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 9-24-20

*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.

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 3 of 3

Section A Required Client Information:
Company: GA Power
Address: Atlanta, GA
Email To: SCS Contacts
Phone: Fax:
Requested Due Date/TAT: 10 Day

Section B Required Project Information
Report To: SCS Contacts
Copy To: Geosyntec Contacts
Purchase Order No.:
Project Name: Plant Hammond AP-4 Semiannual/BKG 08
Project Number: GW6581

Section C Invoice Information
Attention: Southern Co.
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: 10839-12

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR
Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N		42465624
1	HGWA-111	WT	G				–		5	2		3							X	X	X	X	N	pH =
2	HGWA-112	WT	G				–		5	2		3							X	X	X	X	N	pH =
3	HGWA-113	WT	G				–		5	2		3							X	X	X	X	N	pH =
4	HGWC-101	WT	G				–		5	2		3							X	X	X	X	N	pH =
5	HGWC-103	WT	G				–		5	2		3							X	X	X	X	N	pH =
6	HGWC-105	WT	G						5	2		3							X	X	X	X	N	pH =
7	HGWC-107	WT	G	9/24	1636	–	–	19	5	2		3							X	X	X	X	N	pH = 6.11 013
8	HGWC-109	WT	G				–		5	2		3							X	X	X	X	N	pH =
9	HGWC-117	WT	G				–		5	2		3							X	X	X	X	N	pH =
10	HGWC-118	WT	G				–		5	2		3							X	X	X	X	N	pH =
11	FD-04	WT	G				–		5	2		3							X	X	X	X	N	
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.	Thomas Hessler/Geosyntec	9/24	1930	/GEO	9/24	1930	
*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li	/GEO	9/24	2030	Marlia Mullins/GEO	9/24/20	2030	
	Marlia Mullins/GEO	9/25/20	1045	/Pace	9/25/20	1045	
	/Pace	9/25/20	1233		9/25/20	1233	5.2 Y N Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Thomas J Hessler
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 09/24/20

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 late charges of 1.5% per month for any invoices not paid within 30 days.

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Page: 1 of 2

Section A Required Client Information
- Company: GA Power
- Address: Atlanta, GA
- Email To: SCS Contacts
- Phone: Fax:
- Requested Due Date/TAT: 10 Day

Section B Required Project Information
- Report To: SCS Contacts
- Copy To: Geosyntec Contacts
- Purchase Order No.:
- Project Name: Plant Hammond AP-4 Semiannual/BKG 08
- Project Number: GW6581

Section C Invoice Information
- Attention: Southern Co.
- Company Name:
- Address:
- Pace Quote Reference:
- Pace Project Manager: Kevin Herring
- Pace Profile #: 10839-12

REGULATORY AGENCY
- NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐
- UST ☐ RCRA ☐ OTHER CCR ☑
- Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): N N N N

Pace Project No./ Lab I.D.: 92496524

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Chloride Fluoride, Sulfate	TDS	App III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~HGWA-111~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
2	~~HGWA-112~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
3	~~HGWA-113~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
4	~~HGWC-101~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
5	~~HGWC-103~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
6	~~HGWC-105~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
7	~~HGWC-107~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
8	HGWC-109	WT	G	9/25	1620	-	-	14	5	2		3						X	X	X	X	N	pH = 6.79 014
9	~~HGWC-117~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
10	~~HGWC-118~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
11	~~FD-04~~	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
12																						N	

ADDITIONAL COMMENTS

Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.

*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Thomas Kessler / Geosyntec	9/25	1920	[signature] / Geo	9/25	1920	
[signature] / Geo	9/25	2030	Malia Mayben / Geo	9/25/20	2030	
Malia Mayben / Geo	9/28/20	0940	[signature] / Pace	9/28/20	940	
[signature] / Pace	9/28/20	1360				

SAMPLER NAME AND SIGNATURE
- PRINT Name of SAMPLER: Thomas J Kessler
- SIGNATURE of SAMPLER: [signature]
- DATE Signed (MM/DD/YY): 09/25/20

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 late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev 07, 15-Feb-2007

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 2 of 2

Section A Required Client Information:

Company	GA Power
Address	Atlanta, GA
Email To	SCS Contacts
Phone	Fax
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To	SCS Contacts
Copy To	Geosyntec Contacts
Purchase Order No	
Project Name	Plant Hammond AP-4 Semiannual/BKG 08
Project Number	GW6581

Section C Invoice Information:

Attention	Southern Co.
Company Name	
Address	
Pace Quote Reference	
Pace Project Manager	Kevin Herring
Pace Profile #	10839-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N		42446524
1	~~HGWA-111~~	WT	G						5	2		3							X	X	X	X	N	pH =
2	~~HGWA-112~~	WT	G						6	2		3							X	X	X	X	N	pH =
3	~~HGWA-113~~	WT	G						6	2		3							X	X	X	X	N	pH =
4	~~HGWC-101~~	WT	G						6	2		3							X	X	X	X	N	pH =
5	~~HGWC-103~~	WT	G						6	2		3							X	X	X	X	N	pH =
6	~~HGWC-105~~	WT	G						6	2		3							X	X	X	X	N	pH =
7	~~HGWC-107~~	WT	G						6	2		3							X	X	X	X	N	pH =
8	~~HGWC-109~~	WT	G						6	2		3							X	X	X	X	N	pH =
9	HGWC-117	WT	G	9-25-20	1625	-	-	19	5	2		3							X	X	X	X	N	pH = 6.01 015
10	~~HGWC-118~~	WT	G						5	2		3							X	X	X	X	N	pH =
11	~~FD-04~~	WT	G						6	2		3							X	X	X	X	N	
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken	VASHISH TAILOR / GEOSYNTEC	9-25-20	1720	/ GCO	9/25	1920	
*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li	/ GCO	9/25	2030	Madia Mushtaq / GCO	9/25/20	2030	
	Madia Mushtaq / GCO	9/25/20	0940	/ Pace	9/26/20	940	
	/ Pace	9/26/20	1350				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: VASHISH TAILOR

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 9-25-20

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 late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:
Company: GA Power
Address: Atlanta, GA
Email To: SCS Contacts
Phone: Fax:
Requested Due Date/TAT: 10 Day

Section B Required Project Information:
Report To: SCS Contacts
Copy To: Geosyntec Contacts
Purchase Order No.:
Project Name: ~~Plant Hammond AP-4 Semiannual/BKG 08~~
Project Number: GW6581

Section C Invoice Information:
Attention: Southern Co.
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: 10839-12

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: Chloride, Fluoride, Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		N	N	N	N	N		
1	HGWA-111	WT	G			--	--		5	2		3							X	X	X	X	N	62446524
2	HGWA-112	WT	G			--	--		5	2		3							X	X	X	X	N	pH =
3	HGWA-113	WT	G			--	--		6	2		3							X	X	X	X	N	pH =
4	HGWC-101	WT	G			--	--		5	2		3							X	X	X	X	N	pH =
5	HGWC-103	WT	G			--	--		6	2		3							X	X	X	X	N	pH =
6	HGWC-105	WT	G			--	--		5	2		3							X	X	X	X	N	pH =
7	HGWC-107	WT	G			--	--		6	2		3							X	X	X	X	N	pH =
8	HGWC-109	WT	G			--	--		5	2		3							X	X	X	X	N	pH =
9	HGWC-117	WT	G			--	--		5	2		3							X	X	X	X	N	pH =
10	HGWC-118	WT	G	9/28	1256	--	--	23	5	2		3							X	X	X	X	N	pH = 7.03 Last sample 016
11	FD-04	WT	G		--	--	--		5	2		3							X	X	X	X	N	
12																							N	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.	Thomas Kreger/Geosyntec	9/28	2000		9-28	2000	
*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li		9-29	0752	Malia Mynhardt/GEO	9/29/20	0752	
	Malia Mynhardt/GEO	9/29/20	0855	Pace	9/29/20	855	
	Pace	9/29/20	1130	Thomas Kreger/Geosyntec	9/29/20	1130	5.6 Y N Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Thomas Kreger
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY): 09/29/20

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 late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 30, 2020

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

RE: Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 21, 2020 and September 29, 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

Revision 1 - This report replaces the October 21, 2020 report. This project was revised on October 30, 2020 in order to report results from re-analyses. (Greensburg, PA)

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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92496518001	**HGWA-111**	Water	09/18/20 09:43	09/21/20 09:25
92496518002	**HGWA-112**	Water	09/18/20 11:39	09/21/20 09:25
92496518003	**HGWA-47**	Water	09/18/20 11:20	09/21/20 09:25
92496518004	**HGWA-48D**	Water	09/18/20 11:06	09/21/20 09:25
92496518005	**FB-04**	Water	09/18/20 16:40	09/21/20 09:25
92496518006	**HGWA-113**	Water	09/22/20 11:30	09/23/20 09:25
92496518007	**HGWA-113 FILTERED**	Water	09/22/20 12:15	09/23/20 09:25
92496518008	**HGWC-102**	Water	09/24/20 16:51	09/25/20 10:45
92496518009	**HGWC-101**	Water	09/24/20 13:25	09/25/20 10:45
92496518010	**HGWC-103**	Water	09/24/20 18:30	09/25/20 10:45
92496518011	**HGWC-105**	Water	09/24/20 15:05	09/25/20 10:45
92496518012	**FD-04**	Water	09/24/20 00:00	09/25/20 10:45
92496518013	**HGWC-107**	Water	09/24/20 16:56	09/25/20 10:45
92496518014	**HGWC-109**	Water	09/25/20 16:20	09/28/20 09:40
92496518015	**HGWC-117**	Water	09/25/20 16:25	09/28/20 09:40
92496518016	**HGWC-118**	Water	09/28/20 12:56	09/29/20 08:55

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92496518001	**HGWA-111**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92496518002	**HGWA-112**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92496518003	**HGWA-47**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92496518004	**HGWA-48D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92496518005	**FB-04**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92496518006	**HGWA-113**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518007	**HGWA-113 FILTERED**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518008	**HGWC-102**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518009	**HGWC-101**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518010	**HGWC-103**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518011	**HGWC-105**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518012	**FD-04**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518013	**HGWC-107**	EPA 9315	LAL	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518014	**HGWC-109**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518015	**HGWC-117**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92496518016	**HGWC-118**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496518001	**HGWA-111**					
EPA 9315	Radium-226	0.362 ± 0.241 (0.325) C:95% T:NA	pCi/L		09/30/20 07:07	
EPA 9320	Radium-228	0.466 ± 0.560 (1.18) C:61% T:81%	pCi/L		10/26/20 15:11	
Total Radium Calculation	Total Radium	0.828 ± 0.801 (1.51)	pCi/L		10/27/20 12:55	
92496518002	**HGWA-112**					
EPA 9315	Radium-226	0.109 ± 0.166 (0.355) C:92% T:NA	pCi/L		09/30/20 07:11	
EPA 9320	Radium-228	1.04 ± 0.612 (1.16) C:59% T:86%	pCi/L		10/07/20 13:25	
Total Radium Calculation	Total Radium	1.15 ± 0.778 (1.52)	pCi/L		10/19/20 11:59	
92496518003	**HGWA-47**					
EPA 9315	Radium-226	0.146 ± 0.166 (0.308) C:88% T:NA	pCi/L		09/30/20 07:11	
EPA 9320	Radium-228	0.964 ± 0.630 (1.19) C:68% T:80%	pCi/L		10/26/20 15:11	
Total Radium Calculation	Total Radium	1.11 ± 0.796 (1.50)	pCi/L		10/27/20 12:55	
92496518004	**HGWA-48D**					
EPA 9315	Radium-226	0.215 ± 0.258 (0.538) C:90% T:NA	pCi/L		09/30/20 07:11	
EPA 9320	Radium-228	1.28 ± 0.696 (1.30) C:68% T:74%	pCi/L		10/07/20 13:25	
Total Radium Calculation	Total Radium	1.50 ± 0.954 (1.84)	pCi/L		10/19/20 11:59	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496518005	**FB-04**					
EPA 9315	Radium-226	0.0878 ± 0.157 (0.352) C:90% T:NA	pCi/L		09/30/20 07:11	
EPA 9320	Radium-228	0.412 ± 0.387 (0.789) C:69% T:84%	pCi/L		10/07/20 13:42	
Total Radium Calculation	Total Radium	0.500 ± 0.544 (1.14)	pCi/L		10/19/20 11:59	
92496518006	**HGWA-113**					
EPA 9315	Radium-226	0.241 ± 0.203 (0.330) C:89% T:NA	pCi/L		10/14/20 08:15	
EPA 9320	Radium-228	0.310 ± 0.353 (0.738) C:77% T:77%	pCi/L		10/15/20 11:06	
Total Radium Calculation	Total Radium	0.551 ± 0.556 (1.07)	pCi/L		10/20/20 09:06	
92496518007	**HGWA-113 FILTERED**					
EPA 9315	Radium-226	0.151 ± 0.194 (0.400) C:91% T:NA	pCi/L		10/14/20 06:37	
EPA 9320	Radium-228	0.172 ± 0.372 (0.822) C:81% T:78%	pCi/L		10/15/20 11:06	
Total Radium Calculation	Total Radium	0.323 ± 0.566 (1.22)	pCi/L		10/20/20 09:06	
92496518008	**HGWC-102**					
EPA 9315	Radium-226	0.187 ± 0.254 (0.539) C:79% T:NA	pCi/L		10/15/20 07:05	
EPA 9320	Radium-228	1.23 ± 0.524 (0.860) C:68% T:85%	pCi/L		10/15/20 10:54	
Total Radium Calculation	Total Radium	1.42 ± 0.778 (1.40)	pCi/L		10/20/20 09:06	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496518009	**HGWC-101**					
EPA 9315	Radium-226	0.161 ± 0.254 (0.563) C:85% T:NA	pCi/L		10/15/20 07:05	
EPA 9320	Radium-228	0.464 ± 0.468 (0.969) C:69% T:77%	pCi/L		10/15/20 11:12	
Total Radium Calculation	Total Radium	0.625 ± 0.722 (1.53)	pCi/L		10/20/20 09:06	
92496518010	**HGWC-103**					
EPA 9315	Radium-226	0.188 ± 0.234 (0.488) C:93% T:NA	pCi/L		10/15/20 07:05	
EPA 9320	Radium-228	0.616 ± 0.436 (0.846) C:72% T:81%	pCi/L		10/15/20 11:12	
Total Radium Calculation	Total Radium	0.804 ± 0.670 (1.33)	pCi/L		10/20/20 09:06	
92496518011	**HGWC-105**					
EPA 9315	Radium-226	0.0383 ± 0.200 (0.515) C:85% T:NA	pCi/L		10/15/20 07:05	
EPA 9320	Radium-228	1.07 ± 0.555 (1.01) C:71% T:79%	pCi/L		10/15/20 11:12	
Total Radium Calculation	Total Radium	1.11 ± 0.755 (1.53)	pCi/L		10/20/20 09:06	
92496518012	**FD-04**					
EPA 9315	Radium-226	0.0497 ± 0.220 (0.550) C:92% T:NA	pCi/L		10/15/20 07:05	
EPA 9320	Radium-228	1.08 ± 0.586 (1.07) C:67% T:80%	pCi/L		10/15/20 11:31	
Total Radium Calculation	Total Radium	1.13 ± 0.806 (1.62)	pCi/L		10/20/20 10:07	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496518013	**HGWC-107**					
EPA 9315	Radium-226	0.355 ± 0.286 (0.518) C:88% T:NA	pCi/L		10/15/20 07:05	
EPA 9320	Radium-228	0.221 ± 0.413 (0.905) C:72% T:79%	pCi/L		10/15/20 11:31	
Total Radium Calculation	Total Radium	0.576 ± 0.699 (1.42)	pCi/L		10/20/20 10:07	
92496518014	**HGWC-109**					
EPA 9315	Radium-226	0.262 ± 0.257 (0.489) C:82% T:NA	pCi/L		10/15/20 07:07	
EPA 9320	Radium-228	0.322 ± 0.451 (0.968) C:71% T:80%	pCi/L		10/15/20 11:12	
Total Radium Calculation	Total Radium	0.584 ± 0.708 (1.46)	pCi/L		10/20/20 10:07	
92496518015	**HGWC-117**					
EPA 9315	Radium-226	0.0913 ± 0.181 (0.419) C:87% T:NA	pCi/L		10/15/20 07:32	
EPA 9320	Radium-228	0.0637 ± 0.424 (0.967) C:68% T:81%	pCi/L		10/15/20 11:12	
Total Radium Calculation	Total Radium	0.155 ± 0.605 (1.39)	pCi/L		10/20/20 10:07	
92496518016	**HGWC-118**					
EPA 9315	Radium-226	0.228 ± 0.259 (0.527) C:86% T:NA	pCi/L		10/15/20 07:06	
EPA 9320	Radium-228	0.385 ± 0.408 (0.850) C:70% T:85%	pCi/L		10/15/20 11:14	
Total Radium Calculation	Total Radium	0.613 ± 0.667 (1.38)	pCi/L		10/20/20 10:07	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWA-111 **Lab ID: 92496518001** Collected: 09/18/20 09:43 Received: 09/21/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.362 ± 0.241 (0.325) C:95% T:NA**	pCi/L	09/30/20 07:07	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.466 ± 0.560 (1.18) C:61% T:81%**	pCi/L	10/26/20 15:11	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.828 ± 0.801 (1.51)**	pCi/L	10/27/20 12:55	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWA-112 **Lab ID: 92496518002** Collected: 09/18/20 11:39 Received: 09/21/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.109 ± 0.166 (0.355) C:92% T:NA**	pCi/L	09/30/20 07:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**1.04 ± 0.612 (1.16) C:59% T:86%**	pCi/L	10/07/20 13:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.15 ± 0.778 (1.52)**	pCi/L	10/19/20 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWA-47 **Lab ID: 92496518003** Collected: 09/18/20 11:20 Received: 09/21/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.146 ± 0.166 (0.308) C:88% T:NA**	pCi/L	09/30/20 07:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.964 ± 0.630 (1.19) C:68% T:80%**	pCi/L	10/26/20 15:11	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.11 ± 0.796 (1.50)**	pCi/L	10/27/20 12:55	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWA-48D **Lab ID: 92496518004** Collected: 09/18/20 11:06 Received: 09/21/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.215 ± 0.258 (0.538) C:90% T:NA**	pCi/L	09/30/20 07:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**1.28 ± 0.696 (1.30) C:68% T:74%**	pCi/L	10/07/20 13:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.50 ± 0.954 (1.84)**	pCi/L	10/19/20 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: FB-04 **Lab ID: 92496518005** Collected: 09/18/20 16:40 Received: 09/21/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.0878 ± 0.157 (0.352) C:90% T:NA**	pCi/L	09/30/20 07:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.412 ± 0.387 (0.789) C:69% T:84%**	pCi/L	10/07/20 13:42	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.500 ± 0.544 (1.14)**	pCi/L	10/19/20 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWA-113 **Lab ID: 92496518006** Collected: 09/22/20 11:30 Received: 09/23/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.241 ± 0.203 (0.330) C:89% T:NA**	pCi/L	10/14/20 08:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.310 ± 0.353 (0.738) C:77% T:77%**	pCi/L	10/15/20 11:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.551 ± 0.556 (1.07)**	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWA-113 FILTERED **Lab ID: 92496518007** Collected: 09/22/20 12:15 Received: 09/23/20 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.151 ± 0.194 (0.400) C:91% T:NA**	pCi/L	10/14/20 06:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.172 ± 0.372 (0.822) C:81% T:78%**	pCi/L	10/15/20 11:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.323 ± 0.566 (1.22)**	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWC-102 **Lab ID: 92496518008** Collected: 09/24/20 16:51 Received: 09/25/20 10:45 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	**0.187 ± 0.254 (0.539) C:79% T:NA**	pCi/L	10/15/20 07:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**1.23 ± 0.524 (0.860) C:68% T:85%**	pCi/L	10/15/20 10:54	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.42 ± 0.778 (1.40)**	pCi/L	10/20/20 09:06	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWC-101 **Lab ID: 92496518009** Collected: 09/24/20 13:25 Received: 09/25/20 10:45 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	**0.161 ± 0.254 (0.563) C:85% T:NA**	pCi/L	10/15/20 07:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.464 ± 0.468 (0.969) C:69% T:77%**	pCi/L	10/15/20 11:12	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.625 ± 0.722 (1.53)**	pCi/L	10/20/20 09:06	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWC-103 **Lab ID: 92496518010** Collected: 09/24/20 18:30 Received: 09/25/20 10:45 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	**0.188 ± 0.234 (0.488) C:93% T:NA**	pCi/L	10/15/20 07:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.616 ± 0.436 (0.846) C:72% T:81%**	pCi/L	10/15/20 11:12	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.804 ± 0.670 (1.33)**	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWC-105 **Lab ID: 92496518011** Collected: 09/24/20 15:05 Received: 09/25/20 10:45 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	**0.0383 ± 0.200 (0.515) C:85% T:NA**	pCi/L	10/15/20 07:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**1.07 ± 0.555 (1.01) C:71% T:79%**	pCi/L	10/15/20 11:12	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.11 ± 0.755 (1.53)**	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: FD-04 **Lab ID: 92496518012** Collected: 09/24/20 00:00 Received: 09/25/20 10:45 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	**0.0497 ± 0.220 (0.550) C:92% T:NA**	pCi/L	10/15/20 07:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**1.08 ± 0.586 (1.07) C:67% T:80%**	pCi/L	10/15/20 11:31	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.13 ± 0.806 (1.62)**	pCi/L	10/20/20 10:07	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWC-107 **Lab ID: 92496518013** Collected: 09/24/20 16:56 Received: 09/25/20 10:45 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	**0.355 ± 0.286 (0.518) C:88% T:NA**	pCi/L	10/15/20 07:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.221 ± 0.413 (0.905) C:72% T:79%**	pCi/L	10/15/20 11:31	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.576 ± 0.699 (1.42)**	pCi/L	10/20/20 10:07	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWC-109 **Lab ID: 92496518014** Collected: 09/25/20 16:20 Received: 09/28/20 09:40 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	**0.262 ± 0.257 (0.489) C:82% T:NA**	pCi/L	10/15/20 07:07	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.322 ± 0.451 (0.968) C:71% T:80%**	pCi/L	10/15/20 11:12	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.584 ± 0.708 (1.46)**	pCi/L	10/20/20 10:07	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWC-117 **Lab ID: 92496518015** Collected: 09/25/20 16:25 Received: 09/28/20 09:40 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	**0.0913 ± 0.181 (0.419) C:87% T:NA**	pCi/L	10/15/20 07:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.0637 ± 0.424 (0.967) C:68% T:81%**	pCi/L	10/15/20 11:12	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.155 ± 0.605 (1.39)**	pCi/L	10/20/20 10:07	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Sample: HGWC-118 **Lab ID: 92496518016** Collected: 09/28/20 12:56 Received: 09/29/20 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.228 ± 0.259 (0.527) C:86% T:NA**	pCi/L	10/15/20 07:06	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.385 ± 0.408 (0.850) C:70% T:85%**	pCi/L	10/15/20 11:14	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.613 ± 0.667 (1.38)**	pCi/L	10/20/20 10:07	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

QC Batch: 415405 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92496518001, 92496518002, 92496518003, 92496518004, 92496518005

METHOD BLANK: 2008975 Matrix: Water
Associated Lab Samples: 92496518001, 92496518002, 92496518003, 92496518004, 92496518005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.857 ± 0.536 (1.02) C:66% T:74%	pCi/L	10/07/20 10:40	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

QC Batch: 417134
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92496518006, 92496518007

METHOD BLANK: 2016817
Matrix: Water
Associated Lab Samples: 92496518006, 92496518007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.280 ± 0.239 (0.418) C:85% T:NA	pCi/L	10/14/20 06:41	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

QC Batch: 415404
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92496518001, 92496518002, 92496518003, 92496518004, 92496518005

METHOD BLANK: 2008974 Matrix: Water
Associated Lab Samples: 92496518001, 92496518002, 92496518003, 92496518004, 92496518005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.298 ± 0.243 (0.419) C:95% T:NA	pCi/L	09/30/20 07:06	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

QC Batch: 417135
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92496518006, 92496518007

METHOD BLANK: 2016818 Matrix: Water
Associated Lab Samples: 92496518006, 92496518007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.274 ± 0.291 (0.602) C:84% T:86%	pCi/L	10/15/20 11:05	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

QC Batch: 417136
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92496518008, 92496518009, 92496518010, 92496518011, 92496518012, 92496518013, 92496518014, 92496518015, 92496518016

METHOD BLANK: 2016820
Matrix: Water
Associated Lab Samples: 92496518008, 92496518009, 92496518010, 92496518011, 92496518012, 92496518013, 92496518014, 92496518015, 92496518016

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0209 ± 0.127 (0.392) C:91% T:NA	pCi/L	10/15/20 07:09	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

QC Batch: 417137
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92496518008, 92496518009, 92496518010, 92496518011, 92496518012, 92496518013, 92496518014, 92496518015, 92496518016

METHOD BLANK: 2016821
Matrix: Water
Associated Lab Samples: 92496518008, 92496518009, 92496518010, 92496518011, 92496518012, 92496518013, 92496518014, 92496518015, 92496518016

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.369 ± 0.373 (0.768) C:73% T:75%	pCi/L	10/15/20 11:15	

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QUALIFIERS

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

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.

SAMPLE QUALIFIERS

Sample: 92496518001

[1] Sample re-analyzed due to the presence of radon daughter products causing elevated beta count rates which biased the Ra-228 activity result high. Re-analysis results reported.

Sample: 92496518003

[1] Sample re-analyzed due to the presence of radon daughter products causing elevated beta count rates which biased the Ra-228 activity result high. Re-analysis results reported.

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Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92496518001	**HGWA-111**	EPA 9315	415404		
92496518002	**HGWA-112**	EPA 9315	415404		
92496518003	**HGWA-47**	EPA 9315	415404		
92496518004	**HGWA-48D**	EPA 9315	415404		
92496518005	**FB-04**	EPA 9315	415404		
92496518006	**HGWA-113**	EPA 9315	417134		
92496518007	**HGWA-113 FILTERED**	EPA 9315	417134		
92496518008	**HGWC-102**	EPA 9315	417136		
92496518009	**HGWC-101**	EPA 9315	417136		
92496518010	**HGWC-103**	EPA 9315	417136		
92496518011	**HGWC-105**	EPA 9315	417136		
92496518012	**FD-04**	EPA 9315	417136		
92496518013	**HGWC-107**	EPA 9315	417136		
92496518014	**HGWC-109**	EPA 9315	417136		
92496518015	**HGWC-117**	EPA 9315	417136		
92496518016	**HGWC-118**	EPA 9315	417136		
92496518001	**HGWA-111**	EPA 9320	415405		
92496518002	**HGWA-112**	EPA 9320	415405		
92496518003	**HGWA-47**	EPA 9320	415405		
92496518004	**HGWA-48D**	EPA 9320	415405		
92496518005	**FB-04**	EPA 9320	415405		
92496518006	**HGWA-113**	EPA 9320	417135		
92496518007	**HGWA-113 FILTERED**	EPA 9320	417135		
92496518008	**HGWC-102**	EPA 9320	417137		
92496518009	**HGWC-101**	EPA 9320	417137		
92496518010	**HGWC-103**	EPA 9320	417137		
92496518011	**HGWC-105**	EPA 9320	417137		
92496518012	**FD-04**	EPA 9320	417137		
92496518013	**HGWC-107**	EPA 9320	417137		
92496518014	**HGWC-109**	EPA 9320	417137		
92496518015	**HGWC-117**	EPA 9320	417137		
92496518016	**HGWC-118**	EPA 9320	417137		
92496518001	**HGWA-111**	Total Radium Calculation	420380		
92496518002	**HGWA-112**	Total Radium Calculation	419145		
92496518003	**HGWA-47**	Total Radium Calculation	420380		
92496518004	**HGWA-48D**	Total Radium Calculation	419145		
92496518005	**FB-04**	Total Radium Calculation	419145		
92496518006	**HGWA-113**	Total Radium Calculation	419263		
92496518007	**HGWA-113 FILTERED**	Total Radium Calculation	419263		
92496518008	**HGWC-102**	Total Radium Calculation	419263		
92496518009	**HGWC-101**	Total Radium Calculation	419263		
92496518010	**HGWC-103**	Total Radium Calculation	419263		
92496518011	**HGWC-105**	Total Radium Calculation	419263		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92496518

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92496518012	**FD-04**	Total Radium Calculation	419264		
92496518013	**HGWC-107**	Total Radium Calculation	419264		
92496518014	**HGWC-109**	Total Radium Calculation	419264		
92496518015	**HGWC-117**	Total Radium Calculation	419264		
92496518016	**HGWC-118**	Total Radium Calculation	419264		

Pace Analytical

Sample Condition Upon Rece

WO# : 92496518

92496518

Client Name: GA Power

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Othe

Tracking #: _____

Proj. Name:

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

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

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

Cooler Temperature 3.6°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/23/20 cw

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑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 ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
All containers needing preservation have been checked.	☑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 ☑No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑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)

F-ALLC003rev.3, 11September2006

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 3

Section A Required Client Information:
Company: GA Power
Address: Atlanta, GA
Email To: SCS Contacts
Phone: Fax:
Requested Due Date/TAT: 10 Day

Section B Required Project Information:
Report To: SCS Contacts
Copy To: Geosyntec Contacts
Purchase Order No.:
Project Name: Plant Hammond AP-4 Semiannual/BKG 08
Project Number: GW6581

Section C Invoice Information:
Attention: Southern Co.
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: ~~10839-1 10839-2~~ 10839-12

REGULATORY AGENCY: NPDES / GROUND WATER / DRINKING WATER / UST / RCRA / OTHER CCR (checked: OTHER CCR)
Site Location STATE: GA

Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Chloride, Fluoride, Sulfate (N)	TDS (N)	App. III & IV Metals 6010/6020 (N)	RAD 226/228 (N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~HGWC-102~~	WT	G			–	–		5	2		3						X	X	X	X	N	pH =
2	~~MW-47~~	WT	G			–	–		5	2		3						X	X	X	X	N	pH =
3	~~MW-48D~~	WT	G			–	–		5	2		3						X	X	X	X	N	pH =
4	~~FB-04~~	WT	G			–	–		5	2		3						X	X	X	X	N	
5	HGWA-111	WT	G	9/18	0948	–	–	22	5	2		3						X	X	X	X	N	pH = 6.46 001
6	HGWA-112	WT	G	9/18	1139	–	–	23	5	2		3						X	X	X	X	N	pH = 5.58 002
7																							
8																							
9																							
10																							
11																							
12																							

Pace Project No.: 92496518

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Thomas Hessler / Geosyntec	9/18	1700	Chad Russell / geo	9/18	1700				
~~Full App. III & IV Metals: Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl~~	Chad Russell / geo	9/18	1920	Maelia Mulinka / geo	9/18/20	1920				
App III & IV Metals: As, Ba, Be, B, Cd, Ca, Cr, Co	Maelia Mulinka / geo	9/21/20	0925	[illegible] / Pace	9/21/20	926				
Pb, Li	[illegible] / Pace	9/21/20	1208	[illegible]	9/21/20	1208	3.6	Y	N	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Thomas J Hessler
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM/DD/YY): 09/18/20

*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

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CHAIN-OF-CUSTODY / Analytical Request Document

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2 3

Page: 1 of 2 (NM)

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-4/10839-2 (NM)

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / , -) Sample IDs MUST BE UNIQUE	Valid Matrix Codes MATRIX / CODE: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: Chloride, Fluoride, Sulfate	TDS	Full App. III & IV Metals 6010/6020	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																				Y/N	N	N	N	N		
1	~~HGWC-102~~		~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X		N	~~pH =~~ 9246518
2	MW-47		WT	G	09-18-20	1120	-	-	22	5	2		3							X	X	X	X		N	pH = 7.54 003
3	~~MW-48D~~		~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X		N	~~pH =~~
4	~~FB-04~~		~~WT~~	~~G~~			-	-		5	2		3							X	X	X	X		N	
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

F1 09-18-20

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	VAISHISH TAVLOOR / GEOSYNTEC	09-18-20	1645	Chad Rutter / geo	9/18	1645				
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Chad Rutter / geo	9/18	1920	Nadia Martinez / geo	9/19/20	1920				
	Nadia Martinez / geo	9/21/20	0925	[illegible] / Pace	9/21/20	925				
	[illegible] / Pace	9/21/20	1209	Brooke Hentz	9/21/20	1209	3.6	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: VAISHISH TAYLOOR

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 9-18-20

*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.

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Page: 3 of 3

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-4/10839-2

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): N N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Chloride, Fluoride, Sulfate	TDS	Full App. III & IV Metals 6010/6020	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92496518
1	HGWC-102	WT	G				–		5	2		3						X	X	X	X	N	pH= –
2	MW-47	WT	G						5	2		3						X	X	X	X	N	pH= –
3	MW-48D	WT	G	9/18	1106	–	–	23	5	2		3						X	X	X	X	N	pH= 7.50 004
4	FB-04	WT	G	9/18	1640	–	–	–	5	2		3						X	X	X	X	N	005
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

(ER 9/18/2020)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Chad Russo / Geo	9/18	1920	Maria Murphy / Geo	9/18/20	1920				
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Maria Murphy / Geo	9/21/20	0925	[illegible] / Pace	9/21/20	925				
	[illegible] / Pace	9/21/20	1208	[illegible]	9/21/20	1208	3.6	Y	N	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo DATE Signed (MM/DD/YY): 9/18/2020

*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

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information
Company: GA Power	Report To: SCS Contacts NOELLA MUSKUS	Attention: Southern Co.
Address: Atlanta, GA	Copy To: Geosyntec Contacts	Company Name:
	1255 ROBERTS BLVD NW, SUITE 200, KENNESAW, GA 30144	Address:
Email To: SCS Contacts / nmuskus@geosyntec.com	Purchase Order No.	Pace Quote Reference:
Phone: 770 820 6838 Fax:	Project Name: Plant Hammond AP-4 Semiannual/BKG 08	Pace Project Manager: Kevin Herring
Requested Due Date/TAT: 10 Day	Project Number: GW6581	Pace Profile #: 10839-12

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																			N	N	N	N		
1	~~HGWA-111~~	WT	G						5	2		3							X	X	X	X	N	pH =
2	~~HGWA-112~~	WT	G						6	2		3							X	X	X	X	N	pH =
3	HGWA-113	WT	G	9-22-20	1130	-	-	23	5	2		3							X	X	X	X	N	pH = 6.10 006
4	~~HGWC-101~~	WT	G						6	2		3							X	X	X	X	N	pH =
5	~~HGWC-103~~	WT	G						6	2		3							X	X	X	X	N	pH =
6	~~HGWC-105~~	WT	G						6	2		3							X	X	X	X	N	pH =
7	~~HGWC-107~~	WT	G						5	2		3							X	X	X	X	N	pH =
8	~~HGWC-109~~	WT	G						6	2		3							X	X	X	X	N	pH =
9	~~HGWC-117~~	WT	G						6	2		3							X	X	X	X	N	pH =
10	~~HGWC-118~~	WT	G						5	2		3							X	X	X	X	N	pH =
11	~~FD-04~~	WT	G						6	2		3							X	X	X	X	N	
12	HGWA-113 FILTERED	WT	G	9-22-20	1245	-	-	23	5	2		3							X	X	X	X		pH = 6.10 007

92496518

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	VAISHALI THAKKAR / GEOSYNTEC	9-22-20	1750	[illegible]	9/22	1750				
*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li	[illegible]	9/22	1855	Mallia Muslim / geo	9/22/20	1855				
	Mallia Muslim / geo	9/23/20	0925	[illegible] / Pace	9/23/20	925				
	[illegible] / Pace	9/23/20	1040	[illegible]	9/23/20	1040	5.6	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: VAISHALI THAKKAR

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 9-22-20

*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

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Page: 1 of 3

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

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Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-4/~~10830-2~~

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes — MATRIX / CODE: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): N N N N

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	Full App. III & IV Metals 6010/6020	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	HGWC-102	WT	G	9/24	1651	–	–	19	5	2		3							X	X	X	X	N	pH = 5.92 008
2	~~MW-47~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
3	~~MW-40D~~	~~WT~~	~~G~~			~~–~~	~~–~~		~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	~~pH =~~
4	~~FB-04~~	~~WT~~	~~G~~			~~–~~	~~–~~		~~5~~	~~2~~		~~3~~							~~X~~	~~X~~	~~X~~	~~X~~	~~N~~	
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Pace Project No./Lab I.D.: 92496518

CK 9/24/2020

ADDITIONAL COMMENTS

Please note dry wells, strike thorough any wells not sampled, and note when the last sample for the event has been taken.
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Chad Russo / geo	9/24	2030	Malia M[illegible] / geo	9/24/20	2030				
Malia M[illegible] / geo	9/25/20	1045	[illegible] / Pace	9/26/20	1045				
[illegible] / Pace	9/25/20	1232	[illegible]	9/25/20	1232	5.2	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo
SIGNATURE of SAMPLER: Chad Russo
DATE Signed (MM/DD/YY): 9/24/2020

*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

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 2 of 3

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED DATE	COLLECTED TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride	Fluoride	Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92446518
										Preservatives								Requested Analysis Filtered (Y/N)	N	N		N	N			
1	~~HGWA-111~~	WT	G			-	-		5	2		3							X	X		X	X		N	pH =
2	~~HGWA-112~~	WT	G			-	-		5	2		3							X	X		X	X		N	pH =
3	~~HGWA-113~~	WT	G			-	-		5	2		3							X	X		X	X		N	pH =
4	HGWC-101	WT	G	9-24-20	1325	-	-	10	5	2		3							X	X		X	X		N	pH = 5.48
5	HGWC-103	WT	G	9-24-20	1330	-	-	18	5	2		3							X	X		X	X		N	pH = 5.60
6	HGWC-105	WT	G	9-24-20	1505	-	-	19	5	2		3							X	X		X	X		N	pH = 6.63
7	~~HGWC-107~~	WT	G	9-25		-	-		5	2		3							X	X		X	X		N	pH =
8	~~HGWC-109~~	WT	G			-	-		5	2		3							X	X		X	X		N	pH =
9	~~HGWC-117~~	WT	G			-	-		5	2		3							X	X		X	X		N	pH =
10	~~HGWC-118~~	WT	G			-	-		5	2		3							X	X		X	X		N	pH =
11	FD-04	WT	G	9-24-20		-	-		5	2		3							X	X		X	X		N	
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	VAISHALI THAKORE/GEOSYNTEC	9-24-20	1530	[signature]/GEO	9/24	1730	
*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li	[signature]/GEO	9/24	2030	Maria Munkus/GEO	9/24/20	2030	
	Maria Munkus/GEO	9/25/20	1045	[signature]/Pace	9/25/20	1045	
	[signature]/Pace	9/25/20	1233	[signature]	9/25/20	1232	5/2 Y N Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: VAISHALI THAKORE

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 9-24-20

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 late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 3 of 3

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																Requested Analysis Filtered (Y/N)	N	N	N	N		92465516
1	HGWA-111	WT	G				5	2		3							X	X	X	X	N	pH =
2	HGWA-112	WT	G				5	2		3							X	X	X	X	N	pH =
3	HGWA-113	WT	G				5	2		3							X	X	X	X	N	pH =
4	HGWC-101	WT	G				5	2		3							X	X	X	X	N	pH =
5	HGWC-103	WT	G				5	2		3							X	X	X	X	N	pH =
6	HGWC-105	WT	G				5	2		3							X	X	X	X	N	pH =
7	HGWC-107	WT	G	9/24	1650	14	5	2		3							X	X	X	X	N	pH = 6.11
8	HGWC-109	WT	G				5	2		3							X	X	X	X	N	pH =
9	HGWC-117	WT	G				5	2		3							X	X	X	X	N	pH =
10	HGWC-118	WT	G				5	2		3							X	X	X	X	N	pH =
11	FD-04	WT	G				5	2		3							X	X	X	X	N	
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Thomas Hressler/Geosyntec	9/24	1930	Geo	9/24	1930				
*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li	Geo	9/24	2030	Malia Mankin/Geo	9/24/20	2030				
	Malia Mankin/Geo	9/25/20	1045	Pace	9/25/20	1045				
	Pace	9/25/20	1233		9/25/20	1233	5.2	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas J Hressler

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 09/24/20

*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.

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Page: 1 of 2

Section A Required Client Information:

Company	GA Power
Address	Atlanta, GA
Email To	SCS Contacts
Phone	Fax
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To	SCS Contacts
Copy To	Geosyntec Contacts
Purchase Order No.	
Project Name	Plant Hammond AP-4 Semiannual/BKG 08
Project Number	GW6581

Section C Invoice Information:

Attention	Southern Co.
Company Name	
Address	
Pace Quote Reference	
Pace Project Manager	Kevin Herring
Pace Profile #	10839-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW, WATER WT, WASTE WATER WW, PRODUCT P, SOIL/SOLID SL, OIL OL, WIPE WP, AIR AR, OTHER OT, TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Chloride, Fluoride, Sulfate N; TDS N; App. III & IV Metals 6010/6020* N; RAD 226/228 N

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Chloride, Fluoride, Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92496518
1	HGWA-111	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
2	HGWA-112	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
3	HGWA-113	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
4	HGWC-101	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
5	HGWC-103	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
6	HGWC-105	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
7	HGWC-107	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
8	HGWC-109	WT	G	9/25	1630	-	-	14	5	2		3						X	X	X	X	N	pH = 6.79 014
9	HGWC-117	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
10	HGWC-118	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
11	FD-04	WT	G			-	-		5	2		3						X	X	X	X	N	pH =
12																						N	

ADDITIONAL COMMENTS

Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken

*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Thomas Kessler / Geosyntec	9/25	1920	[signature] / Geo	9/25	1920
[signature] / Geo	9/25	2030	Malia Morton / Geo	9/25/20	2030
Malia Morton / Geo	9/28/20	0940	[signature] / Pace	9/28/20	940
[signature] / Pace	9/28/20	1560			

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas Kessler

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 09/25/20

*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

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 2 of 2

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92496518
																		Requested Analysis Filtered (Y/N)	N	N	N	N		
1	~~HGWA-111~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	pH =
2	~~HGWA-112~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	pH =
3	~~HGWA-113~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	pH =
4	~~HGWC-101~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	pH =
5	~~HGWC-103~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	pH =
6	~~HGWC-105~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	pH =
7	~~HGWC-107~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	pH =
8	~~HGWC-109~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	pH =
9	HGWC-117	WT	G	9-25-20	1625	-	-	19	5	2		3							X	X	X	X	N	pH = 6.01 015
10	~~HGWC-118~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	pH =
11	~~FD-04~~	~~WT~~	~~G~~						~~5~~	~~2~~		~~3~~							X	X	X	X	N	
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	VASHISH TAILOR / GEOSYNTEC	9-25-20	1720	/ GCO	9/25	1720	
*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li	/ GCO	9/25	2030	Marlin Mynhardt / GCO	9/25/20	2030	
	Marlin Mynhardt / GCO	9/28/20	0940	/ Pace	9/28/20	940	
	/ Pace	9/28/20	1350				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: VASHISH TAILOR

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 9-25-20

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

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Page: 1 of 1

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Company:	GA Power
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Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

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Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 Semiannual/BKG 08
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	App. III & IV Metals 6010/6020*	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N		92496518
1	HGWA-111	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
2	HGWA-112	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
3	HGWA-113	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
4	HGWC-101	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
5	HGWC-103	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
6	HGWC-105	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
7	HGWC-107	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
8	HGWC-109	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
9	HGWC-117	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
10	HGWC-118	WT	G	9/28	1256	–	–	23	5	2		3							X	X	X	X	N	pH = 7.03 Last sample 016
11	FD-04	WT	G			–	–		5	2		3							X	X	X	X	N	
12																							N	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Thomas Keech / Geosyntec	9/28	2000		9-28	2000	
*App. IV Metals= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li		9-29	0752	Marlia Mayhew / geo	9/29/20	0752	
	Marlia Mayhew / geo	9/29/20	0855	Pace	9/29/20	965	
	Pace	9/29/20	1130		9/29/20	1130	5% Y N Y

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas J Keech

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 09/24/20

*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.

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-226
Analyst:	LAL
Date:	9/29/2020
Worklist:	56348
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2008974
MB concentration:	0.298
M/B Counting Uncertainty:	0.239
MB MDC:	0.419
MB Numerical Performance Indicator:	2.44
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS56348	LCSD56348
Count Date:	9/30/2020	9/30/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.506	0.513
Target Conc. (pCi/L, g, F):	4.749	4.688
Uncertainty (Calculated):	0.057	0.056
Result (pCi/L, g, F):	4.576	4.064
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.754	0.714
Numerical Performance Indicator:	-0.45	-1.71
Percent Recovery:	96.35%	86.68%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS56348	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD56348	
Sample Result (pCi/L, g, F):	4.576	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.754	
Sample Duplicate Result (pCi/L, g, F):	4.064	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.714	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.966	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	10.56%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

10/1/2020

LAM 10/1/2020

Quality Control Sample Performance Assessment

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Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-226
Analyst:	LAL
Date:	10/13/2020
Worklist:	56591
Matrix:	DW

Method Blank Assessment	
MB Sample ID	2016817
MB concantration:	0.280
M/B Counting Uncertainty:	0.235
MB MDC:	0.418
MB Numerical Performance Indicator:	2.33
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS56591	LCSD56591
Count Date:	10/14/2020	10/14/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.512	0.510
Target Conc. (pCi/L, g, F):	4.697	4.711
Uncertainty (Calculated):	0.056	0.057
Result (pCi/L, g, F):	4.666	4.350
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.761	0.758
Numerical Performance Indicator:	-0.08	-0.93
Percent Recovery:	99.33%	92.35%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS56591	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD56591	
Sample Result (pCi/L, g, F):	4.666	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.761	
Sample Duplicate Result (pCi/L, g, F):	4.350	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.758	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.577	92496904020
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	7.29%	92496904020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

LAM 10/14/2020

10/14/2020

Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 10/13/2020
Worklist: 56591
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2016817
MB concentration:	0.280
M/B Counting Uncertainty:	0.235
MB MDC:	0.418
MB Numerical Performance Indicator:	2.33
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS56591	LCSD56591
Count Date:	10/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.512	
Target Conc. (pCi/L, g, F):	4.697	
Uncertainty (Calculated):	0.056	
Result (pCi/L, g, F):	4.666	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.761	
Numerical Performance Indicator:	-0.08	
Percent Recovery:	99.33%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92496904020	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92496904020DUP	
Sample Result (pCi/L, g, F):	0.317	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.241	
Sample Duplicate Result (pCi/L, g, F):	0.374	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.240	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.331	92496904020
Duplicate RPD:	16.61%	92496904020DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comms:

QMM 10/14/2020

RAM 10/14/2020

Quality Control Sample Performance Assessment

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Test:	Ra-226
Analyst:	LAL
Date:	10/14/2020
Worklist:	56593
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2016820
MB concentration:	-0.021
M/B Counting Uncertainty:	0.127
MB MDC:	0.392
MB Numerical Performance Indicator:	-0.32
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS56593	LCSD56593
Count Date:	10/15/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.508	
Target Conc. (pCi/L, g, F):	4.737	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.134	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.806	
Numerical Performance Indicator:	-1.46	
Percent Recovery:	87.27%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92495887027	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92495887027DUP	
Sample Result (pCi/L, g, F):	-0.019	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.155	
Sample Duplicate Result (pCi/L, g, F):	-0.014	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.204	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.035	92495887027
Duplicate RPD:	-27.96%	92495887027DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

10/21

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-228
Analyst:	VAL
Date:	9/29/2020
Worklist:	56349
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2008975
MB concentration:	0.857
M/B 2 Sigma CSU:	0.536
MB MDC:	1.016
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
	LCS56349	LCSD56349
Count Date:	10/7/2020	10/7/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.119	38.119
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.816	0.804
Target Conc. (pCi/L, g, F):	4.670	4.742
Uncertainty (Calculated):	0.229	0.232
Result (pCi/L, g, F):	4.366	5.332
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.021	1.251
Numerical Performance Indicator:	-0.57	0.91
Percent Recovery:	93.48%	112.43%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS56349	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD56349	
Sample Result (pCi/L, g, F):	4.366	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.021	
Sample Duplicate Result (pCi/L, g, F):	5.332	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.251	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.172	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	18.40%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

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

KS 10-8-2020

Quality Control Sample Performance Assessment

Pace Analytical
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Test: Ra-228
Analyst: VAL
Date: 10/16/2020
Worklist: 56592
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	
MB concentration:	
M/B 2 Sigma CSU:	
MB MDC:	
MB Numerical Performance Indicator:	
MB Status vs Numerical Indicator:	
MB Status vs. MDC:	

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS56592	LCSD56592
Count Date:	10/19/2020	10/19/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	37.968	37.968
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.813	0.836
Target Conc. (pCi/L, g, F):	4.670	4.542
Uncertainty (Calculated):	0.229	0.223
Result (pCi/L, g, F):	4.645	4.409
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.050	1.018
Numerical Performance Indicator:	-0.04	-0.25
Percent Recovery:	99.48%	97.06%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS56592	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD56592	
Sample Result (pCi/L, g, F):	4.645	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.050	
Sample Duplicate Result (pCi/L, g, F):	4.409	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.018	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.317	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	2.46%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:

10/20/2020

Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56592
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2016818
MB concentration:	0.274
M/B 2 Sigma CSU:	0.291
MB MDC:	0.602
MB Numerical Performance Indicator:	1.85
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS56592	LCSD56592
Count Date:	10/15/2020	10/15/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.018	38.018
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.813	0.836
Target Conc. (pCi/L, g, F):	4.676	4.548
Uncertainty (Calculated):	0.229	0.223
Result (pCi/L, g, F):	2.226	2.963
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.629	0.764
Numerical Performance Indicator:	-7.18	-3.91
Percent Recovery:	47.60%	65.14%
Status vs Numerical Indicator:	Fail**	N/A
Status vs Recovery:	Fail Low**	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS56592	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD56592	
Sample Result (pCi/L, g, F):	2.226	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.629	
Sample Duplicate Result (pCi/L, g, F):	2.963	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.764	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.460	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	31.10%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:

**Batch must be re-prepped due to LCS failure.

10/20/2020

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56594
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2016821
MB concentration:	0.369
MB 2 Sigma CSU:	0.373
MB MDC:	0.768
MB Numerical Performance Indicator:	1.94
MB Status vs Numericel Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS56594	LCSD56594
Count Date:	10/15/2020	10/15/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.018	38.018
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.813	0.815
Target Conc. (pCi/L, g, F):	4.674	4.667
Uncertainty (Calculated):	0.229	0.229
Result (pCi/L, g, F):	3.952	4.892
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.918	1.152
Numerical Performance Indicator:	-1.49	0.38
Percent Recovery:	84.57%	104.82%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS56594	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD56594	
Sample Result (pCi/L, g, F):	3.952	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.918	
Sample Duplicate Result (pCi/L, g, F):	4.892	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.152	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.250	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	21.38%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:

10/16/20

AK 10/16/2020

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 30, 2020

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

RE: Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between November 11, 2020 and November 12, 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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

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
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners
110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812
North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92505478001	**HGWA-47**	Water	11/10/20 12:44	11/11/20 12:12
92505478002	**EB-01**	Water	11/10/20 16:10	11/11/20 12:12
92505478003	**HGWA-48D**	Water	11/11/20 10:10	11/12/20 16:47

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92505478001	**HGWA-47**	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92505478002	**EB-01**	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92505478003	**HGWA-48D**	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3

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

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110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92505478001	**HGWA-47**					
	Performed by	CUSTOMER			11/11/20 17:42	
	pH	7.34	Std. Units		11/11/20 17:42	
EPA 6010D	Calcium	73.3	mg/L	1.0	11/19/20 01:41	M1
EPA 6020B	Barium	0.027	mg/L	0.010	11/19/20 19:09	
EPA 6020B	Boron	0.0064J	mg/L	0.10	11/19/20 19:09	
EPA 6020B	Lithium	0.0028J	mg/L	0.030	11/19/20 19:09	
SM 2450C-2011	Total Dissolved Solids	229	mg/L	10.0	11/13/20 14:22	
EPA 300.0 Rev 2.1 1993	Chloride	2.7	mg/L	1.0	11/14/20 17:02	
EPA 300.0 Rev 2.1 1993	Fluoride	0.065J	mg/L	0.10	11/14/20 17:02	
EPA 300.0 Rev 2.1 1993	Sulfate	2.3	mg/L	1.0	11/14/20 17:02	
92505478002	**EB-01**					
SM 2450C-2011	Total Dissolved Solids	13.0	mg/L	10.0	11/13/20 14:21	
92505478003	**HGWA-48D**					
	Performed by	CUSTOMER			11/13/20 11:10	
	pH	7.40	Std. Units		11/13/20 11:10	
EPA 6010D	Calcium	61.3	mg/L	1.0	11/19/20 03:25	
EPA 6020B	Antimony	0.00031J	mg/L	0.0030	11/19/20 20:01	B
EPA 6020B	Barium	0.078	mg/L	0.010	11/19/20 20:01	
EPA 6020B	Boron	0.014J	mg/L	0.10	11/19/20 20:01	
EPA 6020B	Lithium	0.0036J	mg/L	0.030	11/19/20 20:01	
EPA 6020B	Molybdenum	0.0012J	mg/L	0.010	11/19/20 20:01	
SM 2450C-2011	Total Dissolved Solids	221	mg/L	10.0	11/17/20 16:04	
EPA 300.0 Rev 2.1 1993	Chloride	2.6	mg/L	1.0	11/18/20 06:11	
EPA 300.0 Rev 2.1 1993	Fluoride	0.083J	mg/L	0.10	11/18/20 06:11	
EPA 300.0 Rev 2.1 1993	Sulfate	4.5	mg/L	1.0	11/18/20 06:11	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

Sample: HGWA-47 **Lab ID: 92505478001** Collected: 11/10/20 12:44 Received: 11/11/20 12:12 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		11/11/20 17:42		
pH	**7.34**	Std. Units			1		11/11/20 17:42		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**73.3**	mg/L	1.0	0.070	1	11/17/20 11:51	11/19/20 01:41	7440-70-2	M1
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	11/19/20 08:40	11/19/20 19:09	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	11/19/20 08:40	11/19/20 19:09	7440-38-2	
Barium	**0.027**	mg/L	0.010	0.00071	1	11/19/20 08:40	11/19/20 19:09	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	11/19/20 08:40	11/19/20 19:09	7440-41-7	
Boron	**0.0064J**	mg/L	0.10	0.0052	1	11/19/20 08:40	11/19/20 19:09	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	11/19/20 08:40	11/19/20 19:09	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	11/19/20 08:40	11/19/20 19:09	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	11/19/20 08:40	11/19/20 19:09	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	11/19/20 08:40	11/19/20 19:09	7439-92-1	
Lithium	**0.0028J**	mg/L	0.030	0.00081	1	11/19/20 08:40	11/19/20 19:09	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	11/19/20 08:40	11/19/20 19:09	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	11/19/20 08:40	11/19/20 19:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/19/20 08:40	11/19/20 19:09	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	11/16/20 08:00	11/18/20 14:04	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**229**	mg/L	10.0	10.0	1		11/13/20 14:22		
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		11/14/20 17:02	16887-00-6	
Fluoride	**0.065J**	mg/L	0.10	0.050	1		11/14/20 17:02	16984-48-8	
Sulfate	**2.3**	mg/L	1.0	0.50	1		11/14/20 17:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

Sample: EB-01 **Lab ID: 92505478002** Collected: 11/10/20 16:10 Received: 11/11/20 12:12 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	11/16/20 11:00	11/19/20 09:45	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	11/19/20 08:40	11/19/20 18:52	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	11/19/20 08:40	11/19/20 18:52	7440-38-2	
Barium	ND	mg/L	0.010	0.00071	1	11/19/20 08:40	11/19/20 18:52	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	11/19/20 08:40	11/19/20 18:52	7440-41-7	
Boron	ND	mg/L	0.10	0.0052	1	11/19/20 08:40	11/19/20 18:52	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	11/19/20 08:40	11/19/20 18:52	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	11/19/20 08:40	11/19/20 18:52	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	11/19/20 08:40	11/19/20 18:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	11/19/20 08:40	11/19/20 18:52	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	11/19/20 08:40	11/19/20 18:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	11/19/20 08:40	11/19/20 18:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	11/19/20 08:40	11/19/20 18:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/19/20 08:40	11/19/20 18:52	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	11/16/20 08:00	11/18/20 13:57	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**13.0**	mg/L	10.0	10.0	1		11/13/20 14:21		
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		11/14/20 16:18	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/14/20 16:18	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		11/14/20 16:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

Sample: HGWA-48D **Lab ID: 92505478003** Collected: 11/11/20 10:10 Received: 11/12/20 16:47 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		11/13/20 11:10		
pH	**7.40**	Std. Units			1		11/13/20 11:10		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**61.3**	mg/L	1.0	0.070	1	11/18/20 15:19	11/19/20 03:25	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	**0.00031J**	mg/L	0.0030	0.00028	1	11/19/20 08:40	11/19/20 20:01	7440-36-0	B
Arsenic	ND	mg/L	0.0050	0.00078	1	11/19/20 08:40	11/19/20 20:01	7440-38-2	
Barium	**0.078**	mg/L	0.010	0.00071	1	11/19/20 08:40	11/19/20 20:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	11/19/20 08:40	11/19/20 20:01	7440-41-7	
Boron	**0.014J**	mg/L	0.10	0.0052	1	11/19/20 08:40	11/19/20 20:01	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	11/19/20 08:40	11/19/20 20:01	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	11/19/20 08:40	11/19/20 20:01	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	11/19/20 08:40	11/19/20 20:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	11/19/20 08:40	11/19/20 20:01	7439-92-1	
Lithium	**0.0036J**	mg/L	0.030	0.00081	1	11/19/20 08:40	11/19/20 20:01	7439-93-2	
Molybdenum	**0.0012J**	mg/L	0.010	0.00069	1	11/19/20 08:40	11/19/20 20:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	11/19/20 08:40	11/19/20 20:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/19/20 08:40	11/19/20 20:01	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	11/16/20 08:00	11/18/20 14:26	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**221**	mg/L	10.0	10.0	1		11/17/20 16:04		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**2.6**	mg/L	1.0	0.60	1		11/18/20 06:11	16887-00-6	
Fluoride	**0.083J**	mg/L	0.10	0.050	1		11/18/20 06:11	16984-48-8	
Sulfate	**4.5**	mg/L	1.0	0.50	1		11/18/20 06:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580529
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92505478002

METHOD BLANK: 3070802 Matrix: Water
Associated Lab Samples: 92505478002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	11/19/20 06:54	

LABORATORY CONTROL SAMPLE: 3070803

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070804 3070805

Parameter	Units	92505541005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	9170 ug/L	1	1	173	169	16300	16000	75-125	2	20	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580692
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92505478001

METHOD BLANK: 3071703 Matrix: Water
Associated Lab Samples: 92505478001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	11/19/20 01:20	

LABORATORY CONTROL SAMPLE: 3071704

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: 3071705 3071706

Parameter	Units	92505478001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	73.3	1	1	75.0	73.5	172	17	75-125	2	20	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 581313
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92505478003

METHOD BLANK: 3074651 Matrix: Water
Associated Lab Samples: 92505478003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	11/19/20 02:12	

LABORATORY CONTROL SAMPLE: 3074652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3074653 3074654

Parameter	Units	92505496006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	133	1	1	130	129	-299	-430	75-125	1	20	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 581474
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92505478001, 92505478002, 92505478003

METHOD BLANK: 3075459 Matrix: Water
Associated Lab Samples: 92505478001, 92505478002, 92505478003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00037J	0.0030	0.00028	11/19/20 17:21	
Arsenic	mg/L	ND	0.0050	0.00078	11/19/20 17:21	
Barium	mg/L	ND	0.010	0.00071	11/19/20 17:21	
Beryllium	mg/L	ND	0.0030	0.000046	11/19/20 17:21	
Boron	mg/L	ND	0.10	0.0052	11/19/20 17:21	
Cadmium	mg/L	ND	0.0025	0.00012	11/19/20 17:21	
Chromium	mg/L	ND	0.010	0.00055	11/19/20 17:21	
Cobalt	mg/L	ND	0.0050	0.00038	11/19/20 17:21	
Lead	mg/L	ND	0.0050	0.000036	11/19/20 17:21	
Lithium	mg/L	ND	0.030	0.00081	11/19/20 17:21	
Molybdenum	mg/L	ND	0.010	0.00069	11/19/20 17:21	
Selenium	mg/L	ND	0.010	0.0016	11/19/20 17:21	
Thallium	mg/L	ND	0.0010	0.00014	11/19/20 17:21	

LABORATORY CONTROL SAMPLE: 3075460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.096	96	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	0.99	99	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	100	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	100	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3075461 3075462

Parameter	Units	92505482033 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.095	0.099	95	99	75-125	4	20	
Arsenic	mg/L	ND	0.1	0.1	0.095	0.096	95	96	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3075461 3075462

Parameter	Units	92505482033 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	ND	0.1	0.1	0.11	0.11	92	95	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.094	0.095	94	95	75-125	1	20	
Boron	mg/L	46.1 ug/L	1	1	0.96	0.98	91	94	75-125	3	20	
Cadmium	mg/L	ND	0.1	0.1	0.096	0.098	96	98	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.095	0.099	95	99	75-125	4	20	
Cobalt	mg/L	ND	0.1	0.1	0.095	0.096	94	96	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20	
Lithium	mg/L	ND	0.1	0.1	0.095	0.093	95	92	75-125	3	20	
Molybdenum	mg/L	ND	0.1	0.1	0.096	0.099	96	99	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.094	0.095	93	95	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.095	0.096	95	96	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580637
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92505478001, 92505478002, 92505478003

METHOD BLANK: 3071454 Matrix: Water
Associated Lab Samples: 92505478001, 92505478002, 92505478003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	11/17/20 13:51	

LABORATORY CONTROL SAMPLE: 3071455

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071456 3071457

Parameter	Units	92505989001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	0.45 ug/L	0.0025	0.0025	0.0030	0.0029	101	97	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580276
QC Batch Method: SM 2450C-2011
Analysis Method: SM 2450C-2011
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92505478001

METHOD BLANK: 3069492 Matrix: Water
Associated Lab Samples: 92505478001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	11/13/20 14:19	

LABORATORY CONTROL SAMPLE: 3069493

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	403	101	84-108	

SAMPLE DUPLICATE: 3069494

Parameter	Units	92505565001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	385	388	1	10	

SAMPLE DUPLICATE: 3069495

Parameter	Units	92505474003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	287	293	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580910
QC Batch Method: SM 2450C-2011
Analysis Method: SM 2450C-2011
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92505478003

METHOD BLANK: 3072613 Matrix: Water
Associated Lab Samples: 92505478003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	11/17/20 16:03	

LABORATORY CONTROL SAMPLE: 3072614

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	411	103	84-108	

SAMPLE DUPLICATE: 3072616

Parameter	Units	92506106002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	62.0	64.0	3	10	

SAMPLE DUPLICATE: 3072820

Parameter	Units	92506187002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	196	209	6	10	

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REPORT OF LABORATORY ANALYSIS

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(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580949
QC Batch Method: SM 2450C-2011
Analysis Method: SM 2450C-2011
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92505478002

METHOD BLANK: 3072818 Matrix: Water
Associated Lab Samples: 92505478002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	11/13/20 14:19	

LABORATORY CONTROL SAMPLE: 3072819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	403	101	84-108	

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REPORT OF LABORATORY ANALYSIS

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(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580375
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92505478001, 92505478002

METHOD BLANK: 3070250 Matrix: Water
Associated Lab Samples: 92505478001, 92505478002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	11/14/20 12:56	
Fluoride	mg/L	ND	0.10	0.050	11/14/20 12:56	
Sulfate	mg/L	ND	1.0	0.50	11/14/20 12:56	

LABORATORY CONTROL SAMPLE: 3070251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.0	100	90-110	
Fluoride	mg/L	2.5	2.7	108	90-110	
Sulfate	mg/L	50	49.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070252 3070253

Parameter	Units	92505439001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	15.5	50	50	65.1	67.1	99	103	90-110	3	10	
Fluoride	mg/L	9.9	2.5	2.5	1.5	11.3	-333	58	90-110	152	10	M6,R1
Sulfate	mg/L	635	50	50	275	677	-721	83	90-110	85	10	M6,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070254 3070255

Parameter	Units	92505478001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.7	50	50	53.8	54.8	102	104	90-110	2	10	
Fluoride	mg/L	0.065J	2.5	2.5	2.7	2.8	105	108	90-110	3	10	
Sulfate	mg/L	2.3	50	50	52.6	53.9	101	103	90-110	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580771
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92505478003

METHOD BLANK: 3071887 Matrix: Water
Associated Lab Samples: 92505478003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	11/17/20 22:58	
Fluoride	mg/L	ND	0.10	0.050	11/17/20 22:58	
Sulfate	mg/L	ND	1.0	0.50	11/17/20 22:58	

LABORATORY CONTROL SAMPLE: 3071888

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.8	102	90-110	
Fluoride	mg/L	2.5	2.6	105	90-110	
Sulfate	mg/L	50	50.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071889 3071890

Parameter	Units	92506020008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	52.0	52.2	104	104	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.4	2.6	97	103	90-110	7	10	
Sulfate	mg/L	ND	50	50	51.4	51.5	103	103	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071891 3071892

Parameter	Units	92506244005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.2	50	50	54.1	54.4	104	104	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.3	2.5	92	99	90-110	7	10	
Sulfate	mg/L	ND	50	50	51.3	51.5	102	102	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92505478001	**HGWA-47**				
92505478003	**HGWA-48D**				
92505478001	**HGWA-47**	EPA 3010A	580692	EPA 6010D	580943
92505478002	**EB-01**	EPA 3010A	580529	EPA 6010D	580567
92505478003	**HGWA-48D**	EPA 3010A	581313	EPA 6010D	581362
92505478001	**HGWA-47**	EPA 3005A	581474	EPA 6020B	581563
92505478002	**EB-01**	EPA 3005A	581474	EPA 6020B	581563
92505478003	**HGWA-48D**	EPA 3005A	581474	EPA 6020B	581563
92505478001	**HGWA-47**	EPA 7470A	580637	EPA 7470A	580829
92505478002	**EB-01**	EPA 7470A	580637	EPA 7470A	580829
92505478003	**HGWA-48D**	EPA 7470A	580637	EPA 7470A	580829
92505478001	**HGWA-47**	SM 2450C-2011	580276		
92505478002	**EB-01**	SM 2450C-2011	580949		
92505478003	**HGWA-48D**	SM 2450C-2011	580910		
92505478001	**HGWA-47**	EPA 300.0 Rev 2.1 1993	580375		
92505478002	**EB-01**	EPA 300.0 Rev 2.1 1993	580375		
92505478003	**HGWA-48D**	EPA 300.0 Rev 2.1 1993	580771		

Pace Analytical	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐ Atlanta ☑ Kernersville ☐

Sample Condition Upon Receipt

Client Name: GA Power

Project #: WO#: 92505478

92505478

Courier: ☐ Commercial ☑ Pace ☐ Fed Ex ☐ UPS ☐ USPS ☐ Other:____ ☐ Client

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☐ No

Date/Initials Person Examining Contents: 11/11/20

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☑ No ☐ N/A

Thermometer: ☑ IR Gun ID: 230 ☐ Wet ☐ Blue ☐ None

Type of Ice:

Cooler Temp: 3.6°C **Correction Factor:** Add/Subtract (°C) 0

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 3.6

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9. FB-01 is Labeled EB-01 11/10/20 @ 1610
-Includes Date/Time/ID/Analysis Matrix: W				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ 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:

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 BKG 02
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	Full App. III & IV Metals	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N		92505478
1	HGWA-47	WT	G	11/10	1244	--	--	21	5	2		3							X	X	X	X	N	pH = 7.34
2	HGWA-48D	WT	G			--	--		5	2		3							X	X	X	X	N	pH =
3	FB-01	WT	G	11/10	1610	--	--	01	5	2		3							X	X	X	X	N	
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Residual Chlorine (Y/N) — Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Thomas Hessler / Geosyntec	11/11	1212	Ken Williams / Pace	11/4/20	1212	
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Ken Williams / Pace	11/11/20	1427				
One sample set submitted for FB-01 but it will be reported for AP-1/2/3/4 SDGs							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas Hessler

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/10/20

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 late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

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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: GA Power
- Address: Atlanta, GA
- Email To: SCS Contacts
- Phone: Fax:
- Requested Due Date/TAT: 10 Day

Section B Required Project Information:
- Report To: SCS Contacts
- Copy To: Geosyntec Contacts
- Purchase Order No.:
- Project Name: Plant Hammond AP-4 BKG 02
- Project Number: GW6581

Section C Invoice Information:
- Attention: Southern Co.
- Company Name:
- Address:
- Pace Quote Reference:
- Pace Project Manager: Kevin Herring
- Pace Profile #: 10839-4

Page: 1 of 1

REGULATORY AGENCY
- ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
- ☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate (N)	TDS (N)	Full App. III & IV Metals (N)	RAD 226/228 (N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92505478
1	~~HGWA-47~~	WT	G			-	-		5	2		3							X	X	X	X	N	pH =
2	HGWA-48D	WT	G	11/11/2020	10:10	-	-	22	5	2		3							X	X	X	X	N	pH = 7.40 003
3	FB-01	WT	G			-	-		5	2		3							X	X	X	X	N	
4																							N	
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

11/11/2020

ADDITIONAL COMMENTS

Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl
One sample set submitted for FB-01 but it will be reported for AP-1/2/3/4 SDGs

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Shawn Liu / Geosyntec	11/11/2020	1701	Thomas Kessler / Geo	11/11	1701				
Thomas Kessler / Geo	11/12	1402	Shan O'Kelly	11/12	1402				
			K. Williford / Pace	11/12/20	1647	4.5	Y	N	Y

SAMPLER NAME AND SIGNATURE
- PRINT Name of SAMPLER: Shawn Liu
- SIGNATURE of SAMPLER: [signature]
- DATE Signed (MM/DD/YY): 11/11/2020

*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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 10, 2020

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

RE: Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between November 11, 2020 and November 12, 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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

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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Peachtree Corners, GA 30092
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SAMPLE SUMMARY

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92505469001	**HGWA-47**	Water	11/10/20 12:44	11/11/20 12:12
92505469002	**EB-01**	Water	11/10/20 16:10	11/11/20 12:12
92505469003	**HGWA-48D**	Water	11/11/20 10:10	11/12/20 16:47

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92505469001	**HGWA-47**	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92505469002	**EB-01**	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92505469003	**HGWA-48D**	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92505469001	**HGWA-47**					
EPA 9315	Radium-226	0.234 ± 0.339 (0.745) C:84% T:NA	pCi/L		12/01/20 07:20	
EPA 9320	Radium-228	-0.0179 ± 0.344 (0.805) C:76% T:86%	pCi/L		12/03/20 11:12	
Total Radium Calculation	Total Radium	0.234 ± 0.683 (1.55)	pCi/L		12/07/20 12:47	
92505469002	**EB-01**					
EPA 9315	Radium-226	0.0159 ± 0.209 (0.560) C:78% T:NA	pCi/L		12/01/20 07:46	
EPA 9320	Radium-228	-0.184 ± 0.389 (0.935) C:74% T:80%	pCi/L		12/03/20 11:11	
Total Radium Calculation	Total Radium	0.0159 ± 0.598 (1.50)	pCi/L		12/07/20 12:47	
92505469003	**HGWA-48D**					
EPA 9315	Radium-226	0.0159 ± 0.209 (0.560) C:78% T:NA	pCi/L		12/01/20 07:46	
EPA 9320	Radium-228	0.760 ± 0.486 (0.932) C:69% T:86%	pCi/L		11/30/20 11:54	
Total Radium Calculation	Total Radium	0.776 ± 0.695 (1.49)	pCi/L		12/07/20 11:09	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

Sample: HGWA-47 **Lab ID: 92505469001** Collected: 11/10/20 12:44 Received: 11/11/20 12:12 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	**0.234 ± 0.339 (0.745) C:84% T:NA**	pCi/L	12/01/20 07:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.0179 ± 0.344 (0.805) C:76% T:86%**	pCi/L	12/03/20 11:12	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.234 ± 0.683 (1.55)**	pCi/L	12/07/20 12:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

Sample: EB-01 **Lab ID: 92505469002** Collected: 11/10/20 16:10 Received: 11/11/20 12:12 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	**0.0159 ± 0.209 (0.560) C:78% T:NA**	pCi/L	12/01/20 07:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.184 ± 0.389 (0.935) C:74% T:80%**	pCi/L	12/03/20 11:11	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.0159 ± 0.598 (1.50)**	pCi/L	12/07/20 12:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

Sample: HGWA-48D **Lab ID: 92505469003** Collected: 11/11/20 10:10 Received: 11/12/20 16:47 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	**0.0159 ± 0.209 (0.560) C:78% T:NA**	pCi/L	12/01/20 07:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.760 ± 0.486 (0.932) C:69% T:86%**	pCi/L	11/30/20 11:54	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.776 ± 0.695 (1.49)**	pCi/L	12/07/20 11:09	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

QC Batch: 425257
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92505469003

METHOD BLANK: 2055115 Matrix: Water
Associated Lab Samples: 92505469003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0581 ± 0.154 (0.491) C:97% T:NA	pCi/L	12/04/20 05:52	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

QC Batch: 423681
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92505469001, 92505469002

METHOD BLANK: 2048181 Matrix: Water
Associated Lab Samples: 92505469001, 92505469002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.309 ± 0.317 (0.625) C:74% T:NA	pCi/L	12/01/20 07:24	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

QC Batch: 424420
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92505469003

METHOD BLANK: 2051473 Matrix: Water
Associated Lab Samples: 92505469003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.159 ± 0.366 (0.813) C:68% T:85%	pCi/L	11/30/20 11:53	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

QC Batch: 423745
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92505469001, 92505469002

METHOD BLANK: 2048526 Matrix: Water
Associated Lab Samples: 92505469001, 92505469002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.623 ± 0.506 (1.00) C:63% T:69%	pCi/L	12/03/20 11:13	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 BKG 02 RADS
Pace Project No.: 92505469

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92505469001	**HGWA-47**	EPA 9315	423681		
92505469002	**EB-01**	EPA 9315	423681		
92505469003	**HGWA-48D**	EPA 9315	425257		
92505469001	**HGWA-47**	EPA 9320	423745		
92505469002	**EB-01**	EPA 9320	423745		
92505469003	**HGWA-48D**	EPA 9320	424420		
92505469001	**HGWA-47**	Total Radium Calculation	426029		
92505469002	**EB-01**	Total Radium Calculation	426029		
92505469003	**HGWA-48D**	Total Radium Calculation	426010		

Pace Analytical	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐ Atlanta ☑ Kernersville ☐

Sample Condition Upon Receipt

Client Name: GA Power

Project #: WO# : 92505469

92505469

Courier: ☐ Commercial ☑ Pace ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Other:

Custody Seal Present? ☐ Yes ☑ No Seals Intact? ☐ Yes ☐ No

Date/Initials Person Examining Contents: 11/11/20

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☑ No ☐ N/A

Thermometer: ☐ IR Gun ID: 230 ☑ Wet ☐ Blue ☐ None

Type of Ice:

Cooler Temp: 3.6 °C Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 3.6

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: W	☑ Yes	☐ No	☐ N/A	9. FB-01 is Labeled EB-01 11/10/20 @ 1610
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: Date/Time:

Project Manager SCURF Review: Date:

Project Manager SRF Review: Date:

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

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

Project # **WO# : 92505469**

PM: KLH1 Due Date: 12/04/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	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 SterilePlastic (N/A – lab)	BP1N	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1	1		1																				1				
2		1	1		1																				1				
3		1	1		1																				1				
4		1	1		1																				1				
5		1	1		1																				1				
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.

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 BKG 02
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: Y/N	Chloride, Fluoride, Sulfate	TDS	Full App. III & IV Metals	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N		92505464
1	HGWA-47	WT	G	11/10	1244	–	–	21	5	2		3							X	X	X	X	N	pH = 7.34
2	HGWA-48D	WT	G			–	–		5	2		3							X	X	X	X	N	pH =
3	FB-01	WT	G	11/10	1610	–	–	21	5	2		3							X	X	X	X	N	
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Thomas Hassler / Geosyntec	11/11	1212	Ryan Williams / Pace	11/12/20	1212	
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Ryan Williams / Pace	11/11/20	1427				
One sample set submitted for FB-01 but it will be reported for AP-1/2/3/4 SDGs							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Thomas Hassler

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/10/20

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 late charges of 1.5% per month for any invoices not paid within 30 days.

Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: JJY
Date: 12/3/2020
Worklist: 57639
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2055115
MB concentration:	-0.058
M/B Counting Uncertainty:	0.154
MB MDC:	0.491
MB Numerical Performance Indicator:	-0.74
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS57639	LCSD57639
Count Date:	12/4/2020	12/4/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.042	24.042
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.506	0.507
Target Conc. (pCi/L, g, F):	4.751	4.743
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	5.488	4.865
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.884	0.813
Numerical Performance Indicator:	1.53	0.29
Percent Recovery:	115.51%	102.56%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment		
Sample I.D.:	LCS57639	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD57639	
Sample Result (pCi/L, g, F):	5.488	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.884	
Sample Duplicate Result (pCi/L, g, F):	4.865	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.813	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.016	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	11.88%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

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

Comments:

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-226
Analyst:	JJY
Date:	11/30/2020
Worklist:	57449
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2048181
MB concentration:	0.309
M/B Counting Uncertainty:	0.314
MB MDC:	0.625
MB Numerical Performance Indicator:	1.93
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS57449	LCSD57449
Count Date:	12/1/2020	12/1/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.042	24.042
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.516	0.515
Target Conc. (pCi/L, g, F):	4.655	4.672
Uncertainty (Calculated):	0.056	0.056
Result (pCi/L, g, F):	5.057	4.315
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.815	0.759
Numerical Performance Indicator:	0.96	-0.92
Percent Recovery:	108.63%	92.35%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS57449	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD57449	
Sample Result (pCi/L, g, F):	5.057	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.815	
Sample Duplicate Result (pCi/L, g, F):	4.315	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.759	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.306	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	16.19%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

12/1/20

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-226
Analyst:	JJY
Date:	11/30/2020
Worklist:	57449
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2048181
MB concentration:	0.309
M/B Counting Uncertainty:	0.314
MB MDC:	0.625
MB Numerical Performance Indicator:	1.93
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS57449	LCSD57449
Count Date:	12/1/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.042	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.516	
Target Conc. (pCi/L, g, F):	4.655	
Uncertainty (Calculated):	0.056	
Result (pCi/L, g, F):	5.057	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.815	
Numerical Performance Indicator:	0.96	
Percent Recovery:	108.63%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92505462001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92505462001DUP	
Sample Result (pCi/L, g, F):	0.150	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.246	
Sample Duplicate Result (pCi/L, g, F):	0.399	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.289	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.282	92505462001
Duplicate RPD:	90.57%	92505462001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

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

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

Comments:

~~***Batch must be re-prepped due to unacceptable precision~~ DNPI < 3
JJY 12-1-20

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-228
Analyst:	VAL
Date:	11/25/2020
Worklist:	57572
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2051473
MB concentration:	0.159
M/B 2 Sigma CSU:	0.366
MB MDC:	0.813
MB Numerical Performance Indicator:	0.85
MB Stetus vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS57572	LCSD57572
Count Date:	11/30/2020	11/30/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	37.445	37.445
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.806	0.812
Target Conc. (pCi/L, g, F):	4.646	4.614
Uncertainty (Calculated):	0.228	0.226
Result (pCi/L, g, F):	5.467	4.634
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.245	1.118
Numerical Performance Indicator:	1.27	0.03
Percent Recovery:	117.68%	100.43%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS57572	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD57572	
Sample Result (pCi/L, g, F):	5.467	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.245	
Sample Duplicate Result (pCi/L, g, F):	4.634	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.118	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.976	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	15.81%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:

12-1-20

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-228
Analyst:	VAL
Date:	11/25/2020
Worklist:	57465
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2048526
MB concentration:	0.623
M/B 2 Sigma CSU:	0.506
MB MDC:	1.002
MB Numerical Performance Indicator:	2.42
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS57465	LCSD57465
Count Date:	12/3/2020	12/3/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	37.408	37.408
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.805	0.826
Target Conc. (pCi/L, g, F):	4.646	4.527
Uncertainty (Calculated):	0.228	0.222
Result (pCi/L, g, F):	3.570	4.606
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.862	1.105
Numerical Performance Indicator:	-2.37	0.14
Percent Recovery:	76.84%	101.73%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS57465	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD57465	
Sample Result (pCi/L, g, F):	3.570	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.862	
Sample Duplicate Result (pCi/L, g, F):	4.606	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.105	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.448	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	27.88%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:

12-4-20

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

January 04, 2021

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

RE: Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 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

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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

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
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners
110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
North Carolina Certification #: 381
South Carolina Certification #: 98011001

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92512587001	**HGWA-47**	Water	12/15/20 10:10	12/17/20 08:48
92512587002	**HGWA-48D**	Water	12/15/20 14:00	12/17/20 08:48
92512587003	**EB-01**	Water	12/15/20 18:02	12/17/20 08:48

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92512587001	**HGWA-47**	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92512587002	**HGWA-48D**	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92512587003	**EB-01**	EPA 6010D	KH	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3

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

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92512587001	**HGWA-47**					
	Performed by	CUSTOMER			01/04/21 15:37	
	pH	7.27	Std. Units		01/04/21 15:37	
EPA 6010D	Calcium	72.5	mg/L	1.0	12/25/20 01:10	
EPA 6020B	Barium	0.027	mg/L	0.010	12/29/20 10:49	
EPA 6020B	Lithium	0.0026J	mg/L	0.030	12/29/20 10:49	
SM 2450C-2011	Total Dissolved Solids	233	mg/L	10.0	12/19/20 12:22	
EPA 300.0 Rev 2.1 1993	Chloride	2.9	mg/L	1.0	12/23/20 21:44	
EPA 300.0 Rev 2.1 1993	Fluoride	0.064J	mg/L	0.10	12/23/20 21:44	
EPA 300.0 Rev 2.1 1993	Sulfate	2.4	mg/L	1.0	12/23/20 21:44	
92512587002	**HGWA-48D**					
	Performed by	CUSTOMER			01/04/21 15:37	
	pH	7.39	Std. Units		01/04/21 15:37	
EPA 6010D	Calcium	61.3	mg/L	1.0	12/25/20 01:15	
EPA 6020B	Barium	0.091	mg/L	0.010	12/29/20 10:55	
EPA 6020B	Boron	0.0083J	mg/L	0.10	12/29/20 10:55	
EPA 6020B	Chromium	0.0013J	mg/L	0.010	12/29/20 10:55	
EPA 6020B	Cobalt	0.00039J	mg/L	0.0050	12/29/20 10:55	
EPA 6020B	Lead	0.00015J	mg/L	0.0050	12/29/20 10:55	
EPA 6020B	Lithium	0.0045J	mg/L	0.030	12/29/20 10:55	
EPA 6020B	Molybdenum	0.00097J	mg/L	0.010	12/29/20 10:55	
SM 2450C-2011	Total Dissolved Solids	239	mg/L	10.0	12/19/20 12:23	
EPA 300.0 Rev 2.1 1993	Chloride	2.7	mg/L	1.0	12/23/20 22:29	
EPA 300.0 Rev 2.1 1993	Fluoride	0.081J	mg/L	0.10	12/23/20 22:29	
EPA 300.0 Rev 2.1 1993	Sulfate	4.2	mg/L	1.0	12/23/20 22:29	
92512587003	**EB-01**					
EPA 6010D	Calcium	0.12J	mg/L	1.0	12/25/20 00:28	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

Sample: HGWA-47 **Lab ID: 92512587001** Collected: 12/15/20 10:10 Received: 12/17/20 08:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		01/04/21 15:37		
pH	**7.27**	Std. Units			1		01/04/21 15:37		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**72.5**	mg/L	1.0	0.070	1	12/24/20 13:26	12/25/20 01:10	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	12/24/20 10:19	12/29/20 10:49	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/24/20 10:19	12/29/20 10:49	7440-38-2	
Barium	**0.027**	mg/L	0.010	0.00071	1	12/24/20 10:19	12/29/20 10:49	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	12/24/20 10:19	12/29/20 10:49	7440-41-7	
Boron	ND	mg/L	0.10	0.0052	1	12/24/20 10:19	12/29/20 10:49	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	12/24/20 10:19	12/29/20 10:49	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	12/24/20 10:19	12/29/20 10:49	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	12/24/20 10:19	12/29/20 10:49	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	12/24/20 10:19	12/29/20 10:49	7439-92-1	
Lithium	**0.0026J**	mg/L	0.030	0.00081	1	12/24/20 10:19	12/29/20 10:49	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	12/24/20 10:19	12/29/20 10:49	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/24/20 10:19	12/29/20 10:49	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/24/20 10:19	12/29/20 10:49	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	12/22/20 07:10	12/22/20 13:26	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**233**	mg/L	10.0	10.0	1		12/19/20 12:22		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**2.9**	mg/L	1.0	0.60	1		12/23/20 21:44	16887-00-6	
Fluoride	**0.064J**	mg/L	0.10	0.050	1		12/23/20 21:44	16984-48-8	
Sulfate	**2.4**	mg/L	1.0	0.50	1		12/23/20 21:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

Sample: HGWA-48D **Lab ID: 92512587002** Collected: 12/15/20 14:00 Received: 12/17/20 08:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
Performed by	**CUSTOMER**				1		01/04/21 15:37		
pH	**7.39**	Std. Units			1		01/04/21 15:37		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**61.3**	mg/L	1.0	0.070	1	12/24/20 13:26	12/25/20 01:15	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	12/24/20 10:19	12/29/20 10:55	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/24/20 10:19	12/29/20 10:55	7440-38-2	
Barium	**0.091**	mg/L	0.010	0.00071	1	12/24/20 10:19	12/29/20 10:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	12/24/20 10:19	12/29/20 10:55	7440-41-7	
Boron	**0.0083J**	mg/L	0.10	0.0052	1	12/24/20 10:19	12/29/20 10:55	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	12/24/20 10:19	12/29/20 10:55	7440-43-9	
Chromium	**0.0013J**	mg/L	0.010	0.00055	1	12/24/20 10:19	12/29/20 10:55	7440-47-3	
Cobalt	**0.00039J**	mg/L	0.0050	0.00038	1	12/24/20 10:19	12/29/20 10:55	7440-48-4	
Lead	**0.00015J**	mg/L	0.0050	0.000036	1	12/24/20 10:19	12/29/20 10:55	7439-92-1	
Lithium	**0.0045J**	mg/L	0.030	0.00081	1	12/24/20 10:19	12/29/20 10:55	7439-93-2	
Molybdenum	**0.00097J**	mg/L	0.010	0.00069	1	12/24/20 10:19	12/29/20 10:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/24/20 10:19	12/29/20 10:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/24/20 10:19	12/29/20 10:55	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	12/22/20 07:10	12/22/20 13:28	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**239**	mg/L	10.0	10.0	1		12/19/20 12:23		
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		12/23/20 22:29	16887-00-6	
Fluoride	**0.081J**	mg/L	0.10	0.050	1		12/23/20 22:29	16984-48-8	
Sulfate	**4.2**	mg/L	1.0	0.50	1		12/23/20 22:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

Sample: EB-01 **Lab ID: 92512587003** Collected: 12/15/20 18:02 Received: 12/17/20 08:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**0.12J**	mg/L	1.0	0.070	1	12/24/20 13:26	12/25/20 00:28	7440-70-2	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	12/24/20 10:19	12/29/20 10:21	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	12/24/20 10:19	12/29/20 10:21	7440-38-2	
Barium	ND	mg/L	0.010	0.00071	1	12/24/20 10:19	12/29/20 10:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	12/24/20 10:19	12/29/20 10:21	7440-41-7	
Boron	ND	mg/L	0.10	0.0052	1	12/24/20 10:19	12/29/20 10:21	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	12/24/20 10:19	12/29/20 10:21	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	12/24/20 10:19	12/29/20 10:21	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	12/24/20 10:19	12/29/20 10:21	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	12/24/20 10:19	12/29/20 10:21	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	12/24/20 10:19	12/29/20 10:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	12/24/20 10:19	12/29/20 10:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	12/24/20 10:19	12/29/20 10:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	12/24/20 10:19	12/29/20 10:21	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	12/22/20 07:10	12/22/20 13:02	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		12/19/20 12:23		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		12/23/20 20:00	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		12/23/20 20:00	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		12/23/20 20:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

QC Batch: 589396
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92512587001, 92512587002, 92512587003

METHOD BLANK: 3113409 Matrix: Water
Associated Lab Samples: 92512587001, 92512587002, 92512587003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	12/24/20 23:39	

LABORATORY CONTROL SAMPLE: 3113410

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: 3113411 3113412

Parameter	Units	92512572002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	28.7	1	1	30.4	29.3	173	61	75-125	4	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

QC Batch: 589337
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92512587001, 92512587002, 92512587003

METHOD BLANK: 3113101 Matrix: Water
Associated Lab Samples: 92512587001, 92512587002, 92512587003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	12/28/20 16:52	
Arsenic	mg/L	ND	0.0050	0.00078	12/28/20 16:52	
Barium	mg/L	ND	0.010	0.00071	12/28/20 16:52	
Beryllium	mg/L	ND	0.0030	0.000046	12/28/20 16:52	
Boron	mg/L	ND	0.10	0.0052	12/28/20 16:52	
Cadmium	mg/L	ND	0.0025	0.00012	12/28/20 16:52	
Chromium	mg/L	ND	0.010	0.00055	12/28/20 16:52	
Cobalt	mg/L	ND	0.0050	0.00038	12/28/20 16:52	
Lead	mg/L	ND	0.0050	0.000036	12/28/20 16:52	
Lithium	mg/L	ND	0.030	0.00081	12/28/20 16:52	
Molybdenum	mg/L	ND	0.010	0.00069	12/28/20 16:52	
Selenium	mg/L	ND	0.010	0.0016	12/28/20 16:52	
Thallium	mg/L	ND	0.0010	0.00014	12/28/20 16:52	

LABORATORY CONTROL SAMPLE: 3113102

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	101	80-120	
Arsenic	mg/L	0.1	0.094	94	80-120	
Barium	mg/L	0.1	0.095	95	80-120	
Beryllium	mg/L	0.1	0.095	95	80-120	
Boron	mg/L	1	0.91	91	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.097	97	80-120	
Cobalt	mg/L	0.1	0.095	95	80-120	
Lead	mg/L	0.1	0.097	97	80-120	
Lithium	mg/L	0.1	0.096	96	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.094	94	80-120	
Thallium	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3113103 3113104

Parameter	Units	92512103004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Arsenic	mg/L	ND	0.1	0.1	0.092	0.092	92	92	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3113103 3113104

Parameter	Units	92512103004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	ND	0.1	0.1	0.094	0.094	94	94	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.095	0.096	95	96	75-125	1	20	
Boron	mg/L	ND	1	1	0.92	0.95	91	95	75-125	3	20	
Cadmium	mg/L	ND	0.1	0.1	0.095	0.096	95	96	75-125	1	20	
Chromium	mg/L	ND	0.1	0.1	0.093	0.096	93	96	75-125	3	20	
Cobalt	mg/L	ND	0.1	0.1	0.094	0.093	94	93	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.092	0.095	92	95	75-125	3	20	
Lithium	mg/L	ND	0.1	0.1	0.094	0.099	94	99	75-125	4	20	
Molybdenum	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.089	0.091	89	91	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.091	0.094	91	94	75-125	3	20	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

QC Batch: 588542
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92512587001, 92512587002, 92512587003

METHOD BLANK: 3109729 Matrix: Water
Associated Lab Samples: 92512587001, 92512587002, 92512587003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	12/22/20 12:50	

LABORATORY CONTROL SAMPLE: 3109730

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3109731 3109732

Parameter	Units	92512574004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0022	0.0023	89	90	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

QC Batch: 588373
QC Batch Method: SM 2450C-2011
Analysis Method: SM 2450C-2011
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92512587001, 92512587002, 92512587003

METHOD BLANK: 3109057 Matrix: Water
Associated Lab Samples: 92512587001, 92512587002, 92512587003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	12/19/20 12:17	

LABORATORY CONTROL SAMPLE: 3109058

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 3109059

Parameter	Units	92512397001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	65.0	70.0	7	10	

SAMPLE DUPLICATE: 3109063

Parameter	Units	92512574004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	193	183	5	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

QC Batch: 589104
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92512587001, 92512587002, 92512587003

METHOD BLANK: 3112052 Matrix: Water
Associated Lab Samples: 92512587001, 92512587002, 92512587003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	12/23/20 16:31	
Fluoride	mg/L	ND	0.10	0.050	12/23/20 16:31	
Sulfate	mg/L	ND	1.0	0.50	12/23/20 16:31	

LABORATORY CONTROL SAMPLE: 3112053

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.6	103	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	50	52.0	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3112054 3112055

Parameter	Units	92513456002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	409	50	50	471	456	125	94	90-110	3	10	M6
Fluoride	mg/L	0.14	2.5	2.5	2.1	2.1	77	79	90-110	2	10	M1
Sulfate	mg/L	403	50	50	466	450	126	93	90-110	4	10	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3112056 3112057

Parameter	Units	92512580004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.4	50	50	57.4	57.5	108	108	90-110	0	10	
Fluoride	mg/L	0.18	2.5	2.5	2.7	2.7	102	102	90-110	0	10	
Sulfate	mg/L	11.3	50	50	65.5	65.6	108	109	90-110	0	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92512587001	**HGWA-47**				
92512587002	**HGWA-48D**				
92512587001	**HGWA-47**	EPA 3010A	589396	EPA 6010D	589429
92512587002	**HGWA-48D**	EPA 3010A	589396	EPA 6010D	589429
92512587003	**EB-01**	EPA 3010A	589396	EPA 6010D	589429
92512587001	**HGWA-47**	EPA 3005A	589337	EPA 6020B	589405
92512587002	**HGWA-48D**	EPA 3005A	589337	EPA 6020B	589405
92512587003	**EB-01**	EPA 3005A	589337	EPA 6020B	589405
92512587001	**HGWA-47**	EPA 7470A	588542	EPA 7470A	588758
92512587002	**HGWA-48D**	EPA 7470A	588542	EPA 7470A	588758
92512587003	**EB-01**	EPA 7470A	588542	EPA 7470A	588758
92512587001	**HGWA-47**	SM 2450C-2011	588373		
92512587002	**HGWA-48D**	SM 2450C-2011	588373		
92512587003	**EB-01**	SM 2450C-2011	588373		
92512587001	**HGWA-47**	EPA 300.0 Rev 2.1 1993	589104		
92512587002	**HGWA-48D**	EPA 300.0 Rev 2.1 1993	589104		
92512587003	**EB-01**	EPA 300.0 Rev 2.1 1993	589104		

Pace Analytical	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐ Atlanta ☑ Kernersville ☐

Sample Condition Upon Receipt

Client Name: GA Power

Project

WO# : 92512587

92512587

Courier: ☐ Commercial ☑ Fed Ex ☐ UPS ☐ USPS ☑ Pace ☐ Other:____ ☐ Client

Custody Seal Present? ☐ Yes ☑ No Seals Intact? ☐ Yes ☐ No

Date/Initials Person Examining Contents: 12/17/20

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☑ No ☐ N/A

Thermometer: ☑ IR Gun ID: 214 ☐ Wet ☐ Blue ☐ None

Type of Ice:

Cooler Temp: 4.2 Correction Factor: Add/Subtract (°C) 0.1

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 4.3

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?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: W				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

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

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project **WO#: 92512587**

PM: KLH1 Due Date: 01/04/21

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1	1			1 ✓																		BPN				
2		1	1			1 ✓																		2/24				
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.

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:

Company:	GA Power
Address:	Atlanta, GA
Email To:	SCS Contacts
Phone:	Fax:
Requested Due Date/TAT:	10 Day

Section B Required Project Information:

Report To:	SCS Contacts
Copy To:	Geosyntec Contacts
Purchase Order No.:	
Project Name:	Plant Hammond AP-4 BKG 03
Project Number:	GW6581

Section C Invoice Information:

Attention:	Southern Co.
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	10839-4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	Full App. III & IV Metals	RAD 226/228	Residual Chlorine (Y/N)
																	Requested Analysis Filtered (Y/N)	N	N	N	N	
1	HGWA-47	WT	G	12/15/2020	10:10	-	-	17	5	2		3						X	X	X	X	N
2	HGWA-48D	WT	G	12/15/2020	14:00	-	-	18	5	2		3						X	X	X	X	N
3	EB-01	WT	G	12/15/2020	18:12	-	-	6	5	2		3						X	X	X	X	N
4																						N
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

4251254?
Pace Project No./ Lab I.D.

pH = 7.29
pH = 7.39

4/15/2020

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Shawn Lin / Geosyntec	12/15/2020	18:15	Thomas Hessler / Pace	12/15	1815
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Thomas Hessler / Pace	12/17	0646	[illegible] / Pace	12/17/20	0900
One sample set submited for EB-01 but it will be reported for AP-1/2/3/4 SDGs	[illegible] / Pace	12/17/20	1102	Charles Hunt	12/17/20	1102

SAMPLE CONDITIONS: Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Shawn Lin

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 12/15/2020

*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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

January 11, 2021

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

RE: Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92512557001	**HGWA-47**	Water	12/15/20 10:10	12/17/20 08:48
92512557002	**HGWA-48D**	Water	12/15/20 14:00	12/17/20 08:48
92512557003	**EB-01**	Water	12/15/20 18:02	12/17/20 08:48

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92512557001	**HGWA-47**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92512557002	**HGWA-48D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92512557003	**EB-01**	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92512557001	**HGWA-47**					
EPA 9315	Radium-226	0.259 ± 0.251 (0.469) C:88% T:NA	pCi/L		01/06/21 06:58	
EPA 9320	Radium-228	0.270 ± 0.353 (0.753) C:73% T:86%	pCi/L		01/04/21 11:29	
Total Radium Calculation	Total Radium	0.529 ± 0.604 (1.22)	pCi/L		01/06/21 14:32	
92512557002	**HGWA-48D**					
EPA 9315	Radium-226	0.255 ± 0.273 (0.548) C:91% T:NA	pCi/L		01/06/21 06:58	
EPA 9320	Radium-228	0.974 ± 0.466 (0.795) C:70% T:81%	pCi/L		01/04/21 11:29	
Total Radium Calculation	Total Radium	1.23 ± 0.739 (1.34)	pCi/L		01/06/21 14:32	
92512557003	**EB-01**					
EPA 9315	Radium-226	0.0278 ± 0.302 (0.765) C:89% T:NA	pCi/L		01/06/21 07:00	
EPA 9320	Radium-228	0.226 ± 0.391 (0.853) C:72% T:88%	pCi/L		01/05/21 13:26	
Total Radium Calculation	Total Radium	0.254 ± 0.693 (1.62)	pCi/L		01/06/21 14:32	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

Sample: HGWA-47 **Lab ID: 92512557001** Collected: 12/15/20 10:10 Received: 12/17/20 08:48 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	**0.259 ± 0.251 (0.469) C:88% T:NA**	pCi/L	01/06/21 06:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.270 ± 0.353 (0.753) C:73% T:86%**	pCi/L	01/04/21 11:29	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.529 ± 0.604 (1.22)**	pCi/L	01/06/21 14:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

Sample: HGWA-48D **Lab ID: 92512557002** Collected: 12/15/20 14:00 Received: 12/17/20 08:48 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.255 ± 0.273 (0.548) C:91% T:NA**	pCi/L	01/06/21 06:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.974 ± 0.466 (0.795) C:70% T:81%**	pCi/L	01/04/21 11:29	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.23 ± 0.739 (1.34)**	pCi/L	01/06/21 14:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

Sample: EB-01 **Lab ID: 92512557003** Collected: 12/15/20 18:02 Received: 12/17/20 08:48 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	**0.0278 ± 0.302 (0.765) C:89% T:NA**	pCi/L	01/06/21 07:00	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.226 ± 0.391 (0.853) C:72% T:88%**	pCi/L	01/05/21 13:26	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.254 ± 0.693 (1.62)**	pCi/L	01/06/21 14:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

QC Batch: 428749
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92512557001, 92512557002, 92512557003

METHOD BLANK: 2071921 Matrix: Water
Associated Lab Samples: 92512557001, 92512557002, 92512557003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.161 ± 0.312 (0.758) C:74% T:81%	pCi/L	01/04/21 11:42	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

QC Batch: 429175
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 92512557001, 92512557002, 92512557003

METHOD BLANK: 2073293 Matrix: Water
Associated Lab Samples: 92512557001, 92512557002, 92512557003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.176 ± 0.138 (0.246) C:97% T:NA	pCi/L	01/05/21 17:40	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALIFIERS

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 BKG 03 RADS
Pace Project No.: 92512557

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92512557001	**HGWA-47**	EPA 9315	429175		
92512557002	**HGWA-48D**	EPA 9315	429175		
92512557003	**EB-01**	EPA 9315	429175		
92512557001	**HGWA-47**	EPA 9320	428749		
92512557002	**HGWA-48D**	EPA 9320	428749		
92512557003	**EB-01**	EPA 9320	428749		
92512557001	**HGWA-47**	Total Radium Calculation	429860		
92512557002	**HGWA-48D**	Total Radium Calculation	429860		
92512557003	**EB-01**	Total Radium Calculation	429860		

Pace Analytical	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐ Atlanta ☑ Kernersville ☐

Sample Condition Upon Receipt

Client Name: GA Power

Project # WO#: 92512557

Courier: ☐ Commercial ☑ Pace ☐ Fed Ex ☐ UPS ☐ USPS ☐ Other: ☐ Client

Custody Seal Present? ☐ Yes ☑ No Seals Intact? ☐ Yes ☐ No

Date/Initials Person Examining Contents: 2/12/25

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☑ No ☐ N/A

Thermometer: ☑ IR Gun ID: 214 ☐ Wet ☐ Blue ☐ None

Type of Ice:

Cooler Temp: 4.2 Correction Factor: Add/Subtract (°C) 0.1

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 4.3

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?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: W				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: Date/Time:

Project Manager SCURF Review: Date:

Project Manager SRF Review: Date:

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

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project # **WO# : 92512557**

PM: KLH1 Due Date: 01/11/21

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP1N	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1	1			1 ✓																			2 ✓			
2		1	1			1 ✓																			2 ✓			
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

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

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

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:		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:	
				Address:	
Email To:	SCS Contacts	Purchase Order No.:		Pace Quote Reference:	
Phone:	Fax:	Project Name:	Plant Hammond AP-4 BKG 03	Pace Project Manager:	Kevin Herring
Requested Due Date/TAT:	10 Day	Project Number:	GW6581	Pace Profile #:	10839-4

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: GA

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID (A-Z, 0-9 / ,) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE DATE	COMPOSITE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Chloride, Fluoride, Sulfate	TDS	Full App. III & IV Metals	RAD 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92512557
																		Y/N	N	N	N	N		
1	HGWA-47	WT	G	12/15/2020	10:10	-	-	17	5	2		3							X	X	X	X	N	pH = 7.27
2	HGWA-48D	WT	G	12/15/2020	14:00	-	-	18	5	2		3							X	X	X	X	N	pH = 7.39
3	EB-01	WT	G	12/15/2020	18:02	-	-	6	5	2		3							X	X	X	X	N	
4																								
5																								
6																								
7																								
8												4/15/2020												
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike thorugh any wells not sampled, and note when the last sample for the event has been taken.	Shawn Lin / Geosyntec	12/15/2020	18:15	Thomas Hessler / Geo	12/15	1815	
Full App. III & IV Metals=Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl	Thomas Hessler / Geo	12/17	0646	Pace	12/17/20	0646	
One sample set submited for EB-01 but it will be reported for AP-1/2/3/4 SDGs	Pace	12/17/20	1102	Charles Hunt	12/17/20	1102	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Shawn Lin

SIGNATURE of SAMPLER: Shawn Lin DATE Signed (MM/DD/YY): 12/15/2020

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 late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Quality Control Sample Performance Assessment

Pace Analytical
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Test:	Ra-226
Analyst:	LAL
Date:	1/5/2021
Worklist:	58138
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2073293
MB concentration:	0.176
M/B Counting Uncertainty:	0.135
MB MDC:	0.246
MB Numerical Performance Indicator:	2.55
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS58138	LCSD58138
Count Date:	1/6/2021	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.041	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.515	
Target Conc. (pCi/L, g, F):	4.669	
Uncertainty (Calculated):	0.056	
Result (pCi/L, g, F):	4.726	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.782	
Numerical Performance Indicator:	0.14	
Percent Recovery:	101.21%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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

Duplicate Sample Assessment		
Sample I.D.:	92512557001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	92512557001DUP	
Sample Result (pCi/L, g, F):	0.259	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.248	
Sample Duplicate Result (pCi/L, g, F):	0.181	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.219	
Are sample and/or duplicate results below RL?	~~See Below~~ ##	
Duplicate Numerical Performance Indicator:	0.458	92512557001
Duplicate RPD:	35.10%	92512557001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

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

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

Comments:

~~***Batch must be re-prepped due to unacceptable precision.~~ N/A
LAM 1/6/21

KLB
1-6-2021

LAM 1/6/21

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-226
Analyst:	LAL
Date:	1/5/2021
Worklist:	58138
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2073293
MB concentration:	0.176
M/B Counting Uncertainty:	0.135
MB MDC:	0.246
MB Numerical Performance Indicator:	2.55
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS58138	LCSD58138
Count Date:	1/6/2021	1/6/2021
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.041	24.041
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.515	0.507
Target Conc. (pCi/L, g, F):	4.669	4.743
Uncertainty (Calculated):	0.056	0.057
Result (pCi/L, g, F):	4.726	4.173
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.782	0.736
Numerical Performance Indicator:	0.14	-1.51
Percent Recovery:	101.21%	87.98%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS58138	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD58138	
Sample Result (pCi/L, g, F):	4.726	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.782	
Sample Duplicate Result (pCi/L, g, F):	4.173	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.736	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.009	92512557001
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	13.99%	92512557001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

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

Comments:

KLB 1-6-2021

LAM 1/6/21

Quality Control Sample Performance Assessment

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Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-228
Analyst:	VAL
Date:	12/30/2021
Worklist:	58094
Matrix:	WT

Method Blank Assessment	
MB Sample ID	2071921
MB concentration:	-0.161
M/B 2 Sigma CSU:	0.312
MB MDC:	0.758
MB Numerical Performance Indicator:	-1.01
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS58094	LCSD58094
Count Date:	1/4/2021	1/4/2021
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	37.015	37.015
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.823	0.825
Target Conc. (pCi/L, g, F):	4.496	4.488
Uncertainty (Calculated):	0.220	0.220
Result (pCi/L, g, F):	5.637	5.675
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.278	1.293
Numerical Performance Indicator:	1.73	1.77
Percent Recovery:	125.39%	126.46%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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

Duplicate Sample Assessment		
Sample I.D.:	LCS58094	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD58094	
Sample Result (pCi/L, g, F):	5.637	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.278	
Sample Duplicate Result (pCi/L, g, F):	5.675	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.293	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.041	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	0.85%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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

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

Comments:

VALIDATION REPORTS

Geosyntec consultants

180A Market Place Boulevard
Knoxville, TN 37922
PH 865.330.0037
www.geosyntec.com

Memorandum

Date:	11 November 2020
To:	Whitney Law
From:	Kristoffer Henderson
CC:	J. Caprio
Subject:	**Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 92487351 and 92487354**

SITE: Plant Hammond AP4

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of one aqueous sample collected 21 July 2020, as part of the Plant Hammond AP4 on-site sampling event.

The sample was 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 7470
- Total Dissolved Solids (TDS) by Standard Method 2540C

The sample was analyzed at Pace Analytical Services, LLC, Asheville, North Caroline, for the following analytical test:

- Chloride, Fluoride and Sulfate by USEPA Method 300.0

The sample was 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 sample was analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
92487351001	HGWC-102

Laboratory ID	Client ID
92487354001	HGWC-102

The sample was received within 0-6 degrees Celsius (^{o}C). No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 92487351 and 92487354: The year was not documented on the COC for the collection time. The collection time was logged in with the collection year on 2020.
- 92487351 and 92487354: There was a time discrepancy for the second sample transfer on the COC. The *relinquished by* time was documented as 7/22/2020 1140 and the *received by* time was documented as 7/22/20 1141.

The field pH data included with the report were not validated.

1.0 METALS

The sample was analyzed for calcium by USEPA methods 3010A/6010D 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 this data set 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 data set is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 555656 and 555325). Metals were not detected in the method blanks above the method detection limits (MDLs).

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample HGWC-102.

The calcium concentration in sample HGWC-102 was greater than four times the spiked concentration. Therefore, no qualifications were applied to the calcium data based on the MS/MSD pair results.

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). 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 sample was 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 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.

2.0 MERCURY

The sample was 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 this data set 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 555226). 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

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 sample was 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 sample was 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 this data set 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, with the following exception.

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 TDS (batch 555676) and one method blank was reported for the anions (batch 555626). The wet chemistry parameters were not detected in the method blanks above the MDLs.

3.4 Matrix Spike/Matrix Spike Duplicate

Two batch MS/MSD pairs were 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 sample was reported to the MDLs. Elevated nondetect results were not reported.

3.11 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. No discrepancies were identified between the level II report and the EDD.

4.0 RADIOCHEMISTRY

The sample was 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 this data set 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 407458). One method blank was reported for the radium-226 data (batch 407104). 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.

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 sample was 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	Extraction or 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 or RPD outside limits (LCS/LCSD)
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
14	Lab flag removed: no validation qualification required

LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample duplicate
RPD - Relative percent difference

Geosyntec consultants

180A Market Place Boulevard
Knoxville, TN 37922
PH 865.330.0037
www.geosyntec.com

Memorandum

Date:	9 December 2020
To:	Whitney Law
From:	Kristoffer Henderson
CC:	J. Caprio
Subject:	**Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 92492559 and 92492563**

SITE: Plant Hammond AP4

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of eleven aqueous samples, one field duplicate and one field blank, collected 25-27 August 2020, as part of the Plant Hammond AP4 on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by USEPA Methods 3005A/6020B
- Mercury by USEPA Method 7470
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services, LLC, Asheville, North Caroline, 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 as qualified are usable for meeting project objectives. Qualified data should be used within the limitation 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
92492559001	HGWA-111
92492559002	HGWA-112
92492559003	HGWA-113
92492559004	HGWC-118
92492559005	HGWC-102
92492559006	FB-02
92492559007	FD-02
92492559008	HGWC-101
92492559009	HGWC-103
92492559010	HGWC-107
92492559011	HGWC-105
92492559012	HGWC-109
92492559013	HGWC-117

Laboratory ID	Client ID
92492563001	HGWA-111
92492563002	HGWA-112
92492563003	HGWA-113
92492563004	HGWC-118
92492563005	HGWC-102
92492563006	FB-02
92492563007	FD-02
92492563008	HGWC-101
92492563009	HGWC-103
92492563010	HGWC-107
92492563011	HGWC-105
92492563012	HGWC-109
92492563013	HGWC-117

The samples were received within 0-6 degrees Celsius (^{o}C). No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 92492559 and 92492563: The collection dates and times were not documented on the COC for samples HGWA-111, HGWA-112 and HGWA-113. The samples were logged in with the collection times of 10:03, 12:10 and 15:17, respectively, and with the collection date of 08/25/20.

- 92492559 and 92492563: The year was not documented on the COC for the collection times. The collection times were logged in with the collection year of 2020.
- 92492559 and 92492563: There was a time discrepancy for the second sample transfer on page 1 of the COC. The *relinquished by* time was documented as 8/26 0949 and the *received by* time was documented as 8/26 950. The *relinquished by* signature, date and time were missing for the third sample transfer on page 1 of the COC.
- 92492559 and 92492563: A collection time was not documented on the COC for the field duplicate. The field duplicate was logged in with the collection time of 00:00.

The field pH data included with the report were not validated.

1.0 METALS

The samples were analyzed for calcium 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 this data set 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 562831 and 563747). Metals were not detected in the method blanks above the method detection limits (MDLs).

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported, using sample HGWC-118. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria.

One batch MS/MSD pair was also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs were reported. The recovery results were within the laboratory 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 set, FB-02. Metals were not detected in the field blank above the MDLs, with the following exceptions.

Barium and boron were detected in the field blank at estimated concentrations greater than the MDLs and less than the reporting limits (RLs). Since barium and boron were detected at concentrations greater than the RLs in the associated samples, no qualifications were applied to the data.

1.8 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-02. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample, HGWC-102.

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 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.

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 this data set 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 563370).

Mercury was detected in the method blank at an estimated concentration greater than the MDL and less than the RL. Since mercury was not detected in the associated samples, no qualifications were applied to the data.

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, using sample HGWA-111. The recovery and 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

An equipment blank was not collected with the sample set.

2.7 Field Blank

One field blank was collected with the sample set, FB-02. Mercury was not detected in the field blank above the MDL.

2.8 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-02. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample, HGWC-102.

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 this data set 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, with the following exception.

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 TDS (batch 563552) and four method blanks were reported for the anions (batches 562698, 563042, 563290 and 563291). The wet chemistry parameters were not detected in the method blanks above the MDLs.

3.4 Matrix Spike/Matrix Spike Duplicate

One sample set MS/MSD pair was reported for anions using sample HGWC-103. The RPD and recovery results were within the laboratory specified acceptance criteria.

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.

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

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

An equipment blank were not collected with the sample set.

3.8 Field Blank

One field blank was collected with the sample set, FB-02. 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-02. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample, HGWC-102.

3.10 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

3.11 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. No discrepancies were identified between the level II report and the EDD.

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 this data set are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported for the radium-228 data (batches 412342, 412347, 412345 and 412346). Four method blanks were reported for the radium-226 data (batches 412356, 412358, 412851 and 412352). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

Radium-226 (0.206 pCi/L) was detected in the method blank in batch 412352 at a concentration greater than the MDC. Therefore, the radium-226 concentration in the associated sample greater than the MDC and less than the method blank concentration was U qualified as not detected at the reported concentration and the radium-226 concentrations in the associated samples greater than the method blank concentration and less than ten times the method blank concentration were J+ qualified as estimated with high biases.

Radium-228 (0.749 pCi/L) was detected in the method blank in batch 412346 at a concentration greater than the MDC. Since radium-228 was not detected at a concentration greater than the MDCs in the associated sample, no qualifications were applied to the data.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier*	Reason Code**
FB-02	Radium-226	0.288	NA	0.288	J+	3
FD-02	Radium-226	0.269	NA	0.269	J+	3
HGWC-107	Radium-226	0.264	NA	0.264	J+	3
HGWC-105	Radium-226	0.300	NA	0.3	J+	3
HGWC-109	Radium-226	0.278	NA	0.278	J+	3
HGWC-117	Radium-226	0.193	NA	0.193	U	3

pCi/L-picocuries 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

4.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

4.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs were reported for radium-226. Four LCS/LCS duplicate (LCSD) pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria.

4.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported using sample FB-02. The RER (2σ) result was within the laboratory specified acceptance criteria.

Three batch laboratory duplicates were reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory specified acceptance criteria.

4.8 Equipment Blank

Equipment blanks were not collected with the sample set.

4.9 Field Blank

One field blank was collected with the sample set, FB-02. 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-02. Acceptable precision (RER (2σ) < 3) was demonstrated between the field duplicate and the original sample, HGWC-102.

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.

* * * * *

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	Extraction or 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 or RPD outside limits (LCS/LCSD)
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
14	Lab flag removed: no validation qualification required

LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample duplicate
RPD - Relative percent difference

Geosyntec consultants

180A Market Place Boulevard
Knoxville, TN 37922
PH 865.330.0037
www.geosyntec.com

Memorandum

Date:	December 11, 2020
To:	Whitney Law
From:	Kristoffer Henderson
CC:	J. Caprio
Subject:	**Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 92496518 and 92496524**

SITE: Plant Hammond AP-4

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of thirteen aqueous samples, one filtered aqueous sample, one field duplicate and one field blank, collected 18-28 September 2020, as part of the Plant Hammond AP on-site sampling event.

The samples were analyzed at Pace Analytical Services Atlanta, 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 Asheville, North Carolina, for the following analytical test:

- Anions (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 limitation 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
92496518001	HGWA-111
92496518002	HGWA-112
92496518003	HGWA-47
92496518004	HGWA-48D
92496518005	FB-04
92496518006	HGWA-113
92496518007	HGWA-113 FILTERED
92496518008	HGWC-102
92496518009	HGWC-101
92496518010	HGWC-103
92496518011	HGWC-105
92496518012	FD-04
92496518013	HGWC-107
92496518014	HGWC-109
92496518015	HGWC-117
92496518016	HGWC-118

Laboratory ID	Client ID
92496524001	HGWA-111
92496524002	HGWA-112
92496524003	HGWA-47
92496524004	HGWA-48D
92496524005	FB-04
92496524006	HGWA-113
92496524007	HGWA-113 FILTERED
92496524008	HGWC-102
92496524009	HGWC-101
92496524010	HGWC-103
92496524011	HGWC-105
92496524012	FD-04
92496524013	HGWC-107
92496524014	HGWC-109
92496524015	HGWC-117
92496524016	HGWC-118

The samples were received within 0-6 degrees Celsius (^{o}C). No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- There were time discrepancies for the third sample transfer on page 1 and the second transfer on page 6-7 of the COC. The *relinquished by* time was documented as 9/25/20 1233 and the *received by* time was documented as 9/25/20 1232.
- The year was not documented for the *relinquished by* and *received by* dates for the first transfer and the *relinquished by* date for the second transfer on pages 1, 7, 8 and 10 of the COC.
- The year was not documented for the *received by* date for the first transfer and the *relinquished by* date for the second transfer on pages 2, 4, 6 and 9 of the COC.
- The year was not documented for the *relinquished by* date for the first transfer on pages 3 and 5 of the COC.
- The year was not documented for the collection times of samples HGWA-111, HGWA-112, MW-48D, FB-04, HGWC-102, HGWC-107, HGWC-109 and HGWC-118. The samples were logged in with the collection year of 2020.
- The *relinquished by* signature, date and time were not documented for the fourth sample transfer on page 8-9 on the COC.
- A collection time was not documented on the COC for field duplicate, FD-04. FD-04 was logged in with the collection time of 00:00.

The field pH data included in the laboratory report were not validated.

1.0 METALS

The samples were analyzed for metals by USEPA methods 3010A/6010D and 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
✓ Total vs Dissolved Metals Assessment
⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in this data set 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 data set is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Eleven method blanks were reported (batches 568426, 568748, 569777, 570301, 570395, 568749, 569670, 570006, 570088, 570375 and 570626). 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). Sample set specific MS/MSD pairs were reported by USEPA method 6010D using sample HGWC-117 and by USEPA method 6020B using sample HGWC-103. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria.

No qualifications were applied based on MS/MSD recoveries if the sample concentration was greater than four times the spiked concentration.

Ten 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). Eleven 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 set, FB-04. Metals were not detected in the field blank above the MDLs.

1.8 Field Duplicate

One field duplicate sample was collected with the sample set, FD-04. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample, HGWC-103.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Total vs Dissolved Metals Assessment

Sample HGWA-113 was collected as both an unfiltered and filtered sample to report total and dissolved metals, respectively. The total metals concentrations were greater than or equal to the dissolved metals concentrations.

1.11 Electronic Data Deliverable (EDD) 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 were not included in the EDD. No other 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
- ✓ Total vs Dissolved Mercury Assessment
- ✓ Electronic Data Deliverables Review

2.1 Overall Assessment

The mercury data reported in this data set 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 data set is 100%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 568007 and 569307). 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). 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.

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). Two LCSs were reported. The recovery results were 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 set, FB-02. Mercury was not detected in the field blank above the MDL.

2.8 Field Duplicate

One field duplicate sample was collected with the sample set, FD-04. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample, HGWC-103.

2.9 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

2.10 Total vs Dissolved Mercury Assessment

Sample HGWA-113 was collected as both an unfiltered and filtered sample to report total and dissolved mercury, respectively. The total mercury concentration was greater than or equal to the dissolved mercury concentration.

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. 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 anions 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
✓ Total vs Dissolved Wet Chemistry Assessment
⊗ Electronic Data Deliverables Review

3.1 Overall Assessment

The wet chemistry data reported in this data set 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 data set is 100%.

3.2 Holding Times

The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding time for the anions (chloride, fluoride and sulfate) 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). Four method blanks were reported for TDS (batches 568395, 568648, 569874 and 570220) and seven method blanks were reported for the anions (batches 568377, 568980, 569204, 569516, 569577, 569831 and 570137). The wet chemistry parameters were not detected in the method blanks above the MDLs.

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two sample set specific MS/MSD pairs were reported for the anions using samples HGWA-111 and FD-04. The recovery and RPD results were within the laboratory specified acceptance criteria, with the following exception.

The recovery of fluoride in the MS using sample FD-04 was low and outside the laboratory specified acceptance criteria. Therefore, the non-detect fluoride result in sample FD-04 was UJ qualified as estimated less than the MDL.

Ten batch MS/MSD pairs were reported for alkalinity and twelve batch MS/MSD pairs were 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**
FD-04	Fluoride	0.050	U M1	0.050	UJ	4

mg/L-milligrams per liter
U-not detected at or above the MDL
M1-laboratory flag indicating MS recovery was outside the QC limits
* Validation qualifiers are defined in Attachment 1 at the end of this report
**Reason codes are defined in Attachment 2 at the end of this report

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs were reported for TDS and seven LCSs were reported for the anions. The recovery results were within the laboratory specified acceptance criteria.

3.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported using sample HGWC-109. The RPD results were within the laboratory specified acceptance criteria.

Six 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 set, FB-04. The wet chemistry parameters were not detected in the field blank above the MDL.

3.9 Field Duplicate

One field duplicate sample was collected with the sample set, FD-04. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample, HGWC-103, with the following exception.

The RPD of chloride was greater than 20%; therefore, the chloride concentrations in the field duplicate pair were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWC-103	Chloride	6.0	NA	39	6.0	J	7
FD-04	Chloride	8.9	NA		8.9	J	7

mg/L-milligrams per liter
NA-not applicable

3.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

3.11 Total vs Dissolved Wet Chemistry Assessment

Sample HGWA-113 was collected as both an unfiltered and filtered sample. The unfiltered wet chemistry concentrations were greater than or equal to the filtered wet chemistry concentrations, with the exception of TDS.

The TDS concentration in HGWA-113 FILTERED was greater than the TDS concentration in HGWA-113. Since the RPD between these concentrations was less than 30% and based on professional and technical judgment, no qualifications were applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD
HGWA-113	TDS	84.0	NA	6
HGWA-113 FILTERED	TDS	89.0	NA	

mg/L-milligrams per liter
NA-not applicable

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. The laboratory flag M1 used in the level II report were not included in the EDD. No other discrepancies were identified between the level II report and the EDD.

4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by USEPA method 9315, radium-228 by USEPA 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
✓ Total vs Dissolved Radiochemistry Assessment
✓ Electronic Data Deliverables Review

4.1 Overall Assessment

The radium-226 and radium-228 data reported in this data set 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 data set is 100%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported for the radium-228 data (batches 415405, 417135 and 417137). Three method blanks were reported for the radium-226 data (batches 417134, 415404 and 417136). 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 and two LCS/LCS duplicate (LCSD) pairs were reported for radium-226. Three 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, with the following exception.

The recovery of radium-228 in the LCS in batch 417135 was low and outside the laboratory specified acceptance criteria. Therefore, the non-detect results of radium-228 and combined radium in the associated sample were UJ qualified as estimated less than the MDCs.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-113	Radium-228	0.310	U	0.310	UJ	5
HGWA-113	Combined Radium 226 + 228	0.551	U	0.551	UJ	5
HGWA-113 FILTERED	Radium-228	0.172	U	0.172	UJ	5
HGWA-113 FILTERED	Combined Radium 226 + 228	0.323	U	0.323	UJ	5

pCi/L- picocuries per liter
U-not detected at or above the MDC

4.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported using samples HGWA-2 and FB-04. The RER (2σ) results were within the laboratory specified acceptance criteria.

Three 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.

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 set, FB-04. 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 set, FD-04. Acceptable precision (RER (2σ) < 3) was demonstrated between the field duplicate and the original sample, HGWC-103.

4.11 Sensitivity

The samples were reported to the MDCs. No elevated nondetect results were reported.

4.12 Total vs Dissolved Radiochemistry Assessment

Sample HGWA-113 was collected as both an unfiltered and filtered sample to report total and dissolved radiochemistry, respectively. The total radiochemistry concentration was greater than or equal to the dissolved radiochemistry concentration.

4.13 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 or RPD recovery outside limits (LCS/LCSD)
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
14	Lab flag removed or modified: no validation qualification required

LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample duplicate
RPD - Relative percent difference

Geosyntec consultants

180A Market Place Boulevard
Knoxville, TN 37922
PH 865.330.0037
www.geosyntec.com

Memorandum

Date:	January 12, 2020
To:	Whitney Law
From:	Kristoffer Henderson
CC:	J. Caprio
Subject:	**Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 92505469 and 92505478**

SITE: Plant Hammond AP-4

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of two aqueous samples and one equipment blank, collected 10-11 November 2020, as part of the Plant Hammond AP on-site sampling event.

The samples were analyzed at Pace Analytical Services Atlanta, 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 Asheville, North Carolina, for the following analytical test:

- Anions (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 limitation 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
92505469001	HGWA-47
92505469002	EB-01
92505469003	HGWA-48D

Laboratory ID	Client ID
92505478001	HGWA-47
92505478002	EB-01
92505478003	HGWA-48D

The samples were received within 0-6 degrees Celsius (^{o}C). No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- EB-01 was listed as FB-01 on the COC and the containers were labeled EB-01. The sample was logged in per the sample label per the client's request.
- The year was not documented for the *relinquished by* date for the first sample transfers on page one of the COC and for the second transfer on page two of the COC.
- The *received by* signature, date and time were not documented for the second sample transfer on page one of the COC.
- The year was not documented for the *received by* date for the first sample transfer on page two of the COC.
- The *relinquished by* signature, date and time were not documented for the third sample transfer on page two of the COC.
- The year was not documented for the collection times of samples HGWA-47 and EB-01. The samples were logged in with the collection year of 2020.

The field pH data included in the laboratory report were not validated.

1.0 METALS

The samples were analyzed for metals by USEPA methods 3010A/6010D and 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 this data set 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 data set is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 580529, 580692, 581313 and 581474). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

Antimony was detected in the method blank in batch 581474 at an estimated concentration greater than the MDL and less than the reporting limit (RL). Therefore, the estimated antimony concentration in the associated sample was U qualified as not detected at the RL.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result	Validation Qualifier*	Reason Code**
HGWA-48D	Antimony	0.00031	J B	0.0030	U	3

mg/L-milligrams per liter
J-estimated concentration greater than the MDL and less than the RL
B-laboratory indicating the analyte was detected in both the method blank and sample
* Validation qualifiers are defined in Attachment 1 at the end of this report
**Reason codes are defined in Attachment 2 at the end of this report

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported for calcium using sample HGWA-47. The relative percent difference (RPD) result was within the laboratory specified acceptance criteria. The MS recovery was high, and the MSD recovery was low, both outside the laboratory specified acceptance criteria. However, since the calcium concentration in sample HGWA-47 was greater than four times the spiked concentration, no qualification was applied to the data.

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). Four 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

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 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 report at a minimum of 20% as part of the data validation process. The laboratory flags M1 and B used in the level II report were not included in the EDD. No other 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 this data set 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 data set is 100%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 580637). 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 qualification was 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

One equipment blank was collected with the sample set, EB-01. Mercury was not detected in the equipment blank 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 nondetect results were 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 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.

3.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard method 2540C and anions 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 this data set 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 data set is 100%.

3.2 Holding Times

The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding time for the anions (chloride, fluoride and sulfate) 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 for TDS (batches 580276, 580910 and 580949) and two method blanks were reported for the anions (batches 580375 and 580771). The wet chemistry parameters were not detected in the method blanks above the MDLs.

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample HGWA-47. The recovery and RPD results were within the laboratory specified acceptance criteria.

Three batch MS/MSD pairs were 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). Three LCSs were reported for TDS and two LCSs were reported for the anions. The recovery results were within the laboratory specified acceptance criteria.

3.6 Laboratory Duplicate

Four 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

One equipment blank was collected with the sample set, EB-01. The wet chemistry parameters were not detected in the equipment blank above the MDL, with the following exception.

TDS (13.0 mg/L) was detected in EB-01 at a concentration greater than the RL. Since TDS was detected in the associated samples at concentrations greater than ten times the equipment blank concentration, no qualifications were applied to the data.

3.8 Field Blank

A field blank was not collected with the sample set.

3.9 Field Duplicate

A field duplicate was not collected with the sample set.

3.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

3.11 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. No discrepancies were identified between the level II report and the EDD.

4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by USEPA method 9315, radium-228 by USEPA 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 this data set 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 data set is 100%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported for the radium-228 data (batches 424420 and 423745). Two method blanks were reported for the radium-226 data (batches 425257 and 423681). 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). 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 batch laboratory duplicate was reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory specified acceptance criteria.

4.8 Equipment Blank

One equipment blank was collected with the sample set, EB-01. Radium-226 and Radium-228 were not detected in the equipment blank above the MDCs.

4.9 Field Blank

A field blank was not collected with the sample 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 nondetect results were 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 or RPD recovery outside limits (LCS/LCSD)
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
14	Lab flag removed or modified: no validation qualification required

LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample duplicate
RPD - Relative percent difference

Geosyntec consultants

180A Market Place Boulevard
Knoxville, TN 37922
PH 865.330.0037
www.geosyntec.com

Memorandum

Date:	February 9, 2020
To:	Whitney Law
From:	Kristoffer Henderson
CC:	J. Caprio
Subject:	**Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 92512557 and 92512587**

SITE: Plant Hammond AP-4

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of two aqueous samples and one equipment blank, collected 15 December 2020, as part of the Plant Hammond AP on-site sampling event.

The samples were analyzed at Pace Analytical Services Atlanta, 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 Asheville, North Carolina, for the following analytical test:

- Anions (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
92512557001	HGWA-47
92512557002	HGWA-48D
92512557003	EB-01

Laboratory ID	Client ID
92512587001	HGWA-47
92512587002	HGWA-48D
92512587003	EB-01

The samples were received within 0-6 degrees Celsius (^{o}C). No sample preservation issues were noted by the laboratory.

The year was not documented on the chain of custody (COC) for the *relinquished by* date for the first sample transfer and *received by* date for the second transfer.

The field pH data included in the laboratory report were not validated.

1.0 METALS

The samples were analyzed for metals by USEPA methods 3010A/6010D and 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 this data set 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 data set is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 589396 and 589337). 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, with the following exception.

Calcium was detected in EB-01 at an estimated concentration greater than the MDL and less than the reporting limit (RL). Since calcium was detected at concentrations greater than the RL in the associated samples, no qualifications were applied to the data.

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 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 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.

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 this data set 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 data set is 100%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 588542). 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 qualification was 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

One equipment blank was collected with the sample set, EB-01. Mercury was not detected in the equipment blank 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 nondetect results were 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 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.

3.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard method 2540C and anions 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 this data set 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 data set is 100%.

3.2 Holding Times

The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding time for the anions (chloride, fluoride and sulfate) 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). One method blank was reported for TDS (batch 588373) and one method blank was reported for the anions (batch 589104). The wet chemistry parameters were not detected in the method blanks above the MDLs.

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two batch MS/MSD pairs were 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). One LCS was reported for TDS and one LCS was reported for the anions. 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

One equipment blank was collected with the sample set, EB-01. The wet chemistry parameters were not detected in the equipment blank 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 MDLs. No elevated nondetect results were reported.

3.11 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. No discrepancies were identified between the level II report and the EDD.

4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by USEPA method 9315, radium-228 by USEPA 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 this data set 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 data set is 100%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported for the radium-228 data (batch 428749). One method blank was reported for the radium-226 data (batch 429175). 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/LCSD pair was reported for radium-228. The recovery and replicate error ratio (RER) [1 sigma (1σ)] 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 HGWA-47. The RER (1σ) result was 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

One equipment blank was collected with the sample set, EB-01. Radium-226 and Radium-228 were not detected in the equipment blank above the MDCs.

4.9 Field Blank

A field blank was not collected with the sample 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 nondetect results were 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 or RPD recovery outside limits (LCS/LCSD)
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
14	Lab flag removed or modified: no validation qualification required

LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample duplicate
RPD - Relative percent difference

FIELD SAMPLING REPORTS

Product Name: Low-Flow System

Date: 2020-07-21 15:17:09

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name		Tubing Type	polyethylene
Project Name	Plant Hammond	Tubing Diameter	in
Site Name	Plant Hammond	Tubing Length	33 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613229		
Turbidity Make/Model		Pump placement from TOC	33 ft

Well Information:		Pumping Information:	
Well ID	HGWC-102	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	13.18 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:52:34	600.01	21.07	5.79	883.45	2.33	13.46	0.12	64.17
Last 5	14:57:34	900.01	21.14	5.79	883.85	2.15	13.47	0.09	63.84
Last 5	15:02:34	1200.00	21.48	5.78	880.53	2.25	13.47	0.08	63.74
Last 5	15:07:34	1499.99	21.55	5.78	879.06	2.04	13.48	0.07	64.22
Last 5	15:12:34	1799.98	21.55	5.77	879.76	0.91	13.47	0.06	64.81
Variance 0			0.33	-0.01	-3.33			-0.01	-0.11
Variance 1			0.07	-0.01	-1.47			-0.01	0.48
Variance 2			-0.00	-0.01	0.70			-0.01	0.59

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-102

Grab

Product Name: Low-Flow System

Date: 2020-08-25 10:04:32

Project Information:		Pump Information:	
Operator Name	Aaron Reeder	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	39.0 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	38.67 ft

Well Information:		Pumping Information:	
Well ID	HGWA-111	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.65907 L
Well Total Depth	43.20 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.60 ft	Total Volume Pumped	10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:41:45	2099.96	20.04	6.57	256.74	7.77	13.70	3.67	89.46
Last 5	09:46:45	2399.96	20.16	6.63	274.45	8.47	13.65	3.54	89.47
Last 5	09:51:45	2699.95	20.13	6.66	275.33	11.50	13.61	3.52	90.60
Last 5	09:56:45	2999.94	20.17	6.68	277.70	12.10	13.55	3.56	90.98
Last 5	10:01:44	3299.93	20.51	6.70	283.62	4.92	13.55	3.52	90.82
Variance 0			-0.03	0.03	0.88			-0.02	1.13
Variance 1			0.04	0.02	2.37			0.03	0.39
Variance 2			0.34	0.02	5.92			-0.03	-0.16

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).

Grab Samples

HGWA-111

Grab

Product Name: Low-Flow System

Date: 2020-08-25 12:13:17

Project Information:		Pump Information:	
Operator Name	Aaron Reeder	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	36.15 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	35.15 ft

Well Information:		Pumping Information:	
Well ID	HGWA-112	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.64635 L
Well Total Depth	39.22 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.50 ft	Total Volume Pumped	3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:49:50	300.04	19.86	5.62	80.37	5.15	13.45	1.39	94.54
Last 5	11:54:50	600.01	20.26	5.55	80.57	6.73	13.45	1.35	95.50
Last 5	11:59:50	900.00	20.71	5.55	80.23	5.30	13.30	1.47	95.97
Last 5	12:04:50	1199.99	20.75	5.54	80.09	6.83	13.30	1.37	97.55
Last 5	12:09:50	1499.98	20.71	5.53	80.23	4.84	13.30	1.39	99.70
Variance 0			0.45	0.00	-0.34			0.12	0.47
Variance 1			0.05	-0.01	-0.14			-0.10	1.58
Variance 2			-0.04	-0.01	0.14			0.02	2.15

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).

Grab Samples

HGWA-112

Grab

Product Name: Low-Flow System

Date: 2020-08-25 15:20:02

Project Information:		Pump Information:	
Operator Name	Aaron Reeder	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	32.53 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	31.53 ft

Well Information:		Pumping Information:	
Well ID	HGWA-113	Final Pumping Rate	125 mL/min
Well diameter	2 in	Total System Volume	0.63020 L
Well Total Depth	36.53 ft	Calculated Sample Rate	300 sec 3.
Screen Length	10 ft	Stabilization Drawdown	6 in
Depth to Water	11.61 ft	Total Volume Pumped	12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:57:46	6013.85	23.36	5.94	102.05	6.33	17.25	2.09	123.66
Last 5	15:02:46	6313.85	23.51	5.95	101.46	6.25	17.25	2.11	125.36
Last 5	15:07:46	6613.83	23.66	5.93	101.16	5.62	17.25	2.08	128.21
Last 5	15:12:46	6913.83	23.80	5.94	101.21	5.17	17.25	2.19	130.95
Last 5	15:17:46	7213.82	24.00	5.95	101.17	4.82	17.25	2.21	133.57
Variance 0			0.15	-0.02	-0.30			-0.03	2.86
Variance 1			0.14	0.01	0.05			0.12	2.74
Variance 2			0.21	0.01	-0.04			0.01	2.62

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).

Grab Samples
HGWA-113
Grab

Product Name: Low-Flow System

Date: 2020-08-27 10:57:13

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	29 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	28 ft

Well Information:		Pumping Information:	
Well ID	HGWC-101	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.61444 L
Well Total Depth	37.98 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	13.10 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:35:33	1501.97	24.50	5.27	287.47	0.64	14.64	0.20	507.67
Last 5	10:40:33	1801.96	24.59	5.28	291.66	0.47	14.68	0.20	547.33
Last 5	10:45:33	2101.95	24.81	5.29	295.16	1.19	14.72	0.19	569.87
Last 5	10:50:35	2403.95	25.01	5.30	300.06	1.02	15.01	0.19	589.65
Last 5	10:55:35	2703.94	24.97	5.32	302.58	1.42	14.76	0.18	604.70
Variance 0			0.22	0.01	3.50			-0.00	22.54
Variance 1			0.20	0.01	4.90			0.00	19.78
Variance 2			-0.05	0.01	2.52			-0.01	15.06

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).

Grab Samples

HGWC-101

Grab

Product Name: Low-Flow System

Date: 2020-08-27 15:35:59

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	33 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	32 ft

Well Information:		Pumping Information:	
Well ID	HGWC-102	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.23729 L
Well Total Depth	37.02 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.95 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:14:27	899.99	22.45	5.70	873.27	0.73	13.11	0.10	363.45
Last 5	15:19:27	1199.98	22.32	5.70	870.34	0.22	13.12	0.08	360.35
Last 5	15:24:27	1499.97	23.13	5.70	869.53	1.07	13.12	0.07	358.60
Last 5	15:29:28	1800.96	23.22	5.70	865.61	0.63	13.13	0.06	423.92
Last 5	15:34:28	2100.96	23.17	5.70	865.18	0.56	13.13	0.06	490.96
Variance 0			0.82	-0.00	-0.81			-0.01	-1.74
Variance 1			0.08	0.00	-3.93			-0.01	65.32
Variance 2			-0.05	-0.00	-0.43			-0.00	67.04

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/7470A).

Grab Samples

HGWC-102

Grab

FD-02

Grab

Product Name: Low-Flow System

Date: 2020-08-27 14:10:43

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	28 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	27 ft

Well Information:		Pumping Information:	
Well ID	HGWC-103	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.60998 L
Well Total Depth	36.86 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	14.65 ft	Total Volume Pumped	24 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:47:50	5704.84	19.82	5.52	715.11	6.57	13.85	0.07	251.12
Last 5	13:52:50	6004.83	19.73	5.52	713.64	6.40	13.85	0.08	250.87
Last 5	13:57:50	6304.82	19.68	5.51	715.70	5.31	13.85	0.07	247.29
Last 5	14:02:50	6604.81	19.64	5.52	717.20	5.52	13.85	0.07	243.73
Last 5	14:07:50	6904.80	19.67	5.52	711.99	3.63	13.85	0.07	241.11
Variance 0			-0.04	-0.01	2.05			-0.00	-3.58
Variance 1			-0.04	0.01	1.50			0.00	-3.56
Variance 2			0.03	-0.00	-5.21			-0.00	-2.62

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).

Grab Samples

HGWC-103

Grab

Product Name: Low-Flow System

Date: 2020-08-27 13:41:26

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	41 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	40 ft

Well Information:		Pumping Information:	
Well ID	HGWC-105	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6680003 L
Well Total Depth	44.88 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	17.72 ft	Total Volume Pumped	9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:18:32	1200.02	19.82	6.51	642.13	3.73	18.02	1.22	25.68
Last 5	13:23:32	1500.02	19.79	6.48	639.54	3.22	18.02	1.73	23.02
Last 5	13:28:32	1800.02	19.87	6.47	634.91	3.04	18.02	0.89	20.98
Last 5	13:33:32	2100.02	19.86	6.45	631.13	2.59	18.02	2.00	18.33
Last 5	13:38:32	2400.01	20.19	6.45	625.08	2.37	18.02	0.40	15.01
Variance 0			0.07	-0.01	-4.62			-0.84	-2.04
Variance 1			-0.01	-0.02	-3.79			1.12	-2.66
Variance 2			0.34	-0.00	-6.04			-1.60	-3.32

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).

Grab Samples

HGWC-105

Grab

Product Name: Low-Flow System

Date: 2020-08-27 17:31:08

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	29 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	28 ft

Well Information:		Pumping Information:	
Well ID	HGWC-107	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.61444 L
Well Total Depth	38.08 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	14.95 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	17:07:51	899.99	20.94	6.10	407.95	1.83	15.00	0.13	283.63
Last 5	17:12:51	1199.98	20.92	6.09	408.24	1.33	15.00	0.12	285.10
Last 5	17:17:51	1499.97	20.88	6.08	407.52	1.17	14.95	0.11	284.11
Last 5	17:22:51	1800.01	20.84	6.08	407.03	1.01	15.03	0.11	281.36
Last 5	17:27:51	2099.98	20.84	6.09	404.82	1.32	15.00	0.11	279.51
Variance 0			-0.05	-0.00	-0.73			-0.01	-0.99
Variance 1			-0.04	0.00	-0.49			-0.00	-2.76
Variance 2			-0.00	0.00	-2.21			-0.00	-1.84

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).

Grab Samples

HGWC-107

Grab

Product Name: Low-Flow System

Date: 2020-08-27 15:40:24

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	27 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	26 ft

Well Information:		Pumping Information:	
Well ID	HGWC-109	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6055124 L
Well Total Depth	31.00 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	8.52 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:17:35	600.02	19.95	6.57	373.14	3.55	8.60	0.53	-10.13
Last 5	15:22:35	900.02	19.80	6.55	370.23	2.85	8.60	0.49	-19.16
Last 5	15:27:35	1200.03	19.97	6.60	368.80	2.29	8.60	0.40	-5.02
Last 5	15:32:35	1500.02	19.98	6.62	367.99	2.16	8.60	0.36	0.41
Last 5	15:37:35	1800.01	20.04	6.64	366.49	1.94	8.60	0.38	4.27
Variance 0			0.17	0.05	-1.43			-0.09	14.14
Variance 1			0.01	0.02	-0.81			-0.05	5.43
Variance 2			0.06	0.02	-1.50			0.02	3.85

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).

Grab Samples

HGWC-109

Grab

Product Name: Low-Flow System

Date: 2020-08-27 17:46:27

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	36 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	HGWC-117	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6456832 L
Well Total Depth	39.90 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	16.63 ft	Total Volume Pumped	12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	17:23:49	2100.01	19.82	5.88	458.18	9.76	16.65	0.17	92.92
Last 5	17:28:49	2400.01	19.82	5.90	469.25	6.78	16.65	0.16	92.33
Last 5	17:33:49	2700.01	19.74	5.91	474.04	5.89	16.65	0.16	92.46
Last 5	17:38:49	3000.01	19.78	5.91	481.03	5.07	16.65	0.16	92.45
Last 5	17:43:49	3300.01	19.72	5.92	484.16	4.83	16.65	0.15	92.83
Variance 0			-0.08	0.01	4.79			-0.00	0.12
Variance 1			0.04	0.01	6.99			-0.00	-0.01
Variance 2			-0.06	0.01	3.13			-0.01	0.38

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).

Grab Samples

HGWC-117

Grab

Product Name: Low-Flow System

Date: 2020-08-26 15:33:25

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	37 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	36 ft

Well Information:		Pumping Information:	
Well ID	HGWC-118	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6501467 L
Well Total Depth	40.80 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	13.18 ft	Total Volume Pumped	37 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:11:10	9599.94	20.77	6.97	547.77	11.30	13.30	0.54	40.13
Last 5	15:16:10	9899.93	20.50	6.97	547.95	12.45	13.30	0.47	41.38
Last 5	15:21:10	10199.93	20.52	6.97	548.69	10.81	13.30	0.52	41.87
Last 5	15:26:10	10499.93	20.42	6.96	547.79	9.58	13.30	0.50	42.77
Last 5	15:31:10	10799.92	20.37	6.97	547.52	9.92	13.30	0.66	43.29
Variance 0			0.01	-0.00	0.74			0.05	0.49
Variance 1			-0.10	-0.00	-0.90			-0.02	0.89
Variance 2			-0.05	0.01	-0.27			0.16	0.53

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).

Grab Samples

HGWC-118

Grab

Product Name: Low-Flow System

Date: 2020-09-18 11:43:10

Project Information:		Pump Information:	
Operator Name	Vashish Taukoor	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	39 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	38 ft

Well Information:		Pumping Information:	
Well ID	HGWA-47	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2640735 L
Well Total Depth	43.45 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	7.3 ft	Total Volume Pumped	10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:13:30	2100.02	22.03	7.54	386.47	2.58	8.80	0.60	35.02
Last 5	11:18:30	2400.02	22.35	7.54	386.00	2.29	8.80	0.61	49.11
Last 5	11:28:30	3000.02	27.62	7.85	0.28	--	--	7.82	119.68
Last 5	11:33:38	3308.03	31.60	7.79	0.24	--	--	7.23	135.26
Last 5	11:38:38	3608.01	34.65	7.70	0.18	--	--	6.80	147.09
Variance 0			5.27	0.31	-385.72			7.21	70.58
Variance 1			3.98	-0.07	-0.04			-0.58	15.58
Variance 2			3.05	-0.09	-0.06			-0.43	11.83

Notes

SmarTroll was not stopped in time before sampling, last reading at 11:18. 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 6010D/6020B).

Grab Samples

HGWA-47

Grab

Product Name: Low-Flow System

Date: 2020-09-18 11:04:40

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	70 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	69 ft

Well Information:		Pumping Information:	
Well ID	HGWA-48D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.7974396 L
Well Total Depth	72.92 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	8.64 ft	Total Volume Pumped	4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:41:48	600.01	21.20	7.52	403.15	2.95	11.29	0.28	200.75
Last 5	10:46:48	900.00	21.96	7.50	404.76	2.94	11.62	0.26	247.42
Last 5	10:51:48	1199.99	22.32	7.50	402.14	2.31	11.72	0.25	308.19
Last 5	10:56:48	1499.99	22.58	7.50	401.40	2.41	11.79	0.24	367.60
Last 5	11:01:48	1799.98	22.62	7.50	401.61	1.50	11.88	0.23	420.84
Variance 0			0.36	-0.00	-2.62			-0.01	60.77
Variance 1			0.27	-0.00	-0.73			-0.01	59.41
Variance 2			0.04	0.00	0.20			-0.01	53.24

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 6010D/6020B).

Grab Samples
HGWA-48D
Grab

Product Name: Low-Flow System

Date: 2020-09-18 09:40:39

Project Information:

Operator Name	Thomas Kessler
Company Name	Geosyntec Consultants
Project Name	GP-Plant Hammond
Site Name	Plant Hammond
Latitude	0° 0' 0"
Longitude	0° 0' 0"
Sonde SN	646773
Turbidity Make/Model	LaMotte 2020we

Pump Information:

Pump Model/Type	QED MP50
Tubing Type	polyethylene
Tubing Diameter	0.17 in
Tubing Length	36 ft
Pump placement from TOC	39 ft

Well Information:

Well ID	HGWA-111
Well diameter	2 in
Well Total Depth	43.21 ft
Screen Length	10 ft
Depth to Water	12.95 ft

Pumping Information:

Final Pumping Rate	200 mL/min
Total System Volume	0.6456832 L
Calculated Sample Rate	300 sec
Stabilization Drawdown	3.6 in
Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:19:19	900.02	21.47	6.27	160.92	1.81	13.39	4.53	95.96
Last 5	09:24:19	1200.02	21.52	6.35	186.38	1.61	13.39	4.37	91.61
Last 5	09:29:19	1500.02	21.51	6.40	193.84	1.65	13.39	4.28	88.98
Last 5	09:34:19	1800.01	21.51	6.43	200.22	1.62	13.39	4.20	88.77
Last 5	09:39:19	2100.02	21.51	6.46	203.49	2.19	13.40	4.16	86.66
Variance 0			-0.01	0.05	7.46			-0.09	-2.63
Variance 1			-0.00	0.03	6.38			-0.07	-0.21
Variance 2			0.00	0.03	3.27			-0.04	-2.10

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 6010D/6020B).

Grab Samples

HGWA-111

Grab

Product Name: Low-Flow System

Date: 2020-09-18 11:34:05

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	42 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	HGWA-112	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6724638 L
Well Total Depth	39.90 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	13.40 ft	Total Volume Pumped	3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:13:21	900.02	22.66	5.58	80.97	6.81	14.00	1.45	109.66
Last 5	11:18:21	1200.02	22.83	5.58	80.59	6.57	14.00	1.35	109.02
Last 5	11:23:21	1500.02	22.93	5.58	80.38	3.95	14.00	1.30	108.00
Last 5	11:28:24	1803.02	23.00	5.57	80.06	4.40	14.00	1.25	108.45
Last 5	11:33:24	2103.01	23.04	5.58	80.14	2.97	14.00	1.23	107.72
Variance 0			0.10	0.00	-0.22			-0.05	-1.02
Variance 1			0.07	-0.01	-0.32			-0.05	0.45
Variance 2			0.05	0.00	0.08			-0.02	-0.72

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 6010D/6020B).

Grab Samples

HGWA-112

Grab

Product Name: Low-Flow System

Date: 2020-09-18 14:19:44

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	31 ft

Well Information:		Pumping Information:	
Well ID	HGWA-113	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6635369 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.51 ft	Total Volume Pumped	0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:56:50	3900.99	22.18	6.07	117.62	13.30	17.91	1.06	76.97
Last 5	14:01:50	4200.99	23.29	6.08	119.16	14.80	18.10	1.06	76.62
Last 5	14:06:50	4500.99	22.76	6.07	116.85	11.60	18.40	1.13	77.01
Last 5	14:11:50	4800.99	22.55	6.07	119.39	12.00	18.72	1.08	76.69
Last 5	14:16:50	5100.99	22.48	6.09	120.17	9.05	14.10	1.12	78.84
Variance 0			-0.53	-0.01	-2.31			0.07	0.39
Variance 1			-0.21	0.00	2.54			-0.06	-0.32
Variance 2			-0.07	0.02	0.78			0.05	2.15

Notes

Low flow purge canceled to purge well dry. Well was not fully evacuated due to equipment malfunction, restarting on 9/21.

Grab Samples

N/A

Product Name: Low-Flow System

Date: 2020-09-21 10:08:11

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	38 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	31 ft

Well Information:		Pumping Information:	
Well ID	HGWA-113	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6546101 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.80 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:46:52	2999.99	20.36	6.03	119.92	11.40	18.35	1.20	70.15
Last 5	09:51:52	3299.99	20.25	6.04	120.48	15.73	18.70	1.14	69.26
Last 5	09:56:52	3599.98	20.24	6.05	120.46	13.88	19.00	1.13	68.46
Last 5	10:01:52	3900.03	20.39	6.05	120.36	17.49	19.40	1.12	68.19
Last 5	10:06:52	4199.98	20.56	6.05	120.12	12.04	19.75	1.08	67.51
Variance 0			-0.01	0.01	-0.02			-0.01	-0.79
Variance 1			0.16	-0.00	-0.10			-0.02	-0.27
Variance 2			0.17	0.00	-0.23			-0.04	-0.69

Notes

Low flow canceled to purge well dry due to insufficient recharge.

Grab Samples

Product Name: Low-Flow System

Date: 2020-09-22 11:41:56

Project Information:		Pump Information:	
Operator Name	Vashish Taukoor	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	34 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	31 ft

Well Information:		Pumping Information:	
Well ID	HGWA-113	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6367564 L
Well Total Depth	36.20ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.89 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:15:31	2400.01	22.62	6.10	102.59	26.5	15.41	3.51	181.21
Last 5	11:20:31	2700.01	22.89	6.10	102.24	26.4	15.55	3.53	192.42
Last 5	11:25:31	3000.00	23.16	6.11	101.93	--	--	3.54	207.81
Last 5	11:30:31	3300.00	23.88	6.12	102.30	--	--	3.71	215.74
Last 5	11:35:31	3600.00	26.44	6.11	100.99	--	--	4.87	218.20
Variance 0			0.27	0.00	-0.31			0.01	15.39
Variance 1			0.72	0.01	0.37			0.17	7.93
Variance 2			2.57	-0.00	-1.32			1.17	2.46

Notes

Well purged dry on 9/21, turbidity still high,purged for 1h. SmarTroll was not stopped in time before sampling, last reading at 11:20. 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 6010D/6020B).

Grab Samples

HGWA-113

Grab

Product Name: Low-Flow System

Date: 2020-09-24 13:27:30

Project Information:		Pump Information:	
Operator Name	Vashish Taukoor	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	35 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	33 ft

Well Information:		Pumping Information:	
Well ID	HGWC-101	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6412198 L
Well Total Depth	37.95 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	13.76 ft	Total Volume Pumped	9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:00:03	600.03	18.70	5.43	273.03	1.28	19.20	0.21	169.58
Last 5	13:05:03	900.03	19.18	5.44	318.17	1.25	18.75	0.23	156.81
Last 5	13:15:03	1500.02	18.93	5.48	325.64	1.13	18.82	0.21	152.95
Last 5	13:20:03	1800.03	19.01	5.48	319.10	1.18	18.84	0.21	154.56
Last 5	13:25:03	2100.48	19.10	5.48	316.16	1.26	18.84	0.21	157.63
Variance 0			-0.25	0.04	7.47			-0.03	-3.86
Variance 1			0.08	-0.00	-6.54			0.00	1.61
Variance 2			0.09	-0.00	-2.94			0.00	3.07

Notes

Start Purge rate was 200 mL/min, then reduced to 100 mL/min.

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 6010D/6020B).

Grab Samples

HGWC-101

Grab

Product Name: Low-Flow System

Date: 2020-09-24 16:49:12

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	34 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	33 ft

Well Information:		Pumping Information:	
Well ID	HGWC-102	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2417564 L
Well Total Depth	36.84 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	13.78 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:26:25	600.01	19.10	5.80	827.17	0.28	14.02	0.24	108.34
Last 5	16:31:25	900.00	19.06	5.82	860.51	0.16	14.02	0.21	110.94
Last 5	16:36:25	1199.99	19.07	5.82	862.21	0.53	14.03	0.18	113.91
Last 5	16:41:25	1499.98	19.10	5.83	871.90	1.12	14.04	0.16	116.59
Last 5	16:46:25	1799.98	19.10	5.82	891.26	0.74	14.04	0.14	121.29
Variance 0			0.01	0.00	1.70			-0.03	2.98
Variance 1			0.03	0.00	9.69			-0.02	2.68
Variance 2			-0.00	-0.01	19.36			-0.02	4.70

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 6010D/6020B).

Grab Samples
HGWC-102
Grab

Product Name: Low-Flow System

Date: 2020-09-24 18:34:14

Project Information:		Pump Information:	
Operator Name	Vashish Taukoor	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	35 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	33 ft

Well Information:		Pumping Information:	
Well ID	HGWC-103	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6412198 L
Well Total Depth	37.80 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	14.13 ft	Total Volume Pumped	15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	18:10:07	4204.03	18.13	5.59	720.16	7.69	14.20	0.25	148.70
Last 5	18:15:07	4504.03	18.14	5.59	720.11	8.78	14.20	0.26	149.26
Last 5	18:20:07	4804.03	18.10	5.59	719.19	8.97	14.20	0.27	149.44
Last 5	18:25:07	5104.02	18.07	5.60	720.34	7.73	14.20	0.26	149.66
Last 5	18:30:07	5404.02	18.08	5.60	721.31	8.35	14.20	0.27	150.48
Variance 0			-0.04	-0.00	-0.92			0.00	0.18
Variance 1			-0.03	0.01	1.15			-0.01	0.22
Variance 2			0.01	-0.00	0.97			0.01	0.82

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 6010D/6020B).

Grab Samples

HGWC-103

Grab

FD-04

Grab

Product Name: Low-Flow System

Date: 2020-09-24 15:09:20

Project Information:		Pump Information:	
Operator Name	Vashish Taukoor	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	41 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	39 ft

Well Information:		Pumping Information:	
Well ID	HGWC-105	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6680003 L
Well Total Depth	44.58 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	17.54 ft	Total Volume Pumped	5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:45:01	900.02	19.07	6.65	649.64	7.41	19.72	0.59	43.15
Last 5	14:50:01	1200.02	19.15	6.64	644.24	5.56	19.72	0.55	39.50
Last 5	14:55:01	1500.02	19.05	6.64	640.20	4.62	19.72	0.52	37.68
Last 5	15:00:01	1800.03	19.01	6.63	637.78	4.51	19.72	0.52	36.49
Last 5	15:05:01	2100.03	18.99	6.63	635.79	4.30	19.72	0.53	36.32
Variance 0			-0.10	-0.01	-4.04			-0.02	-1.82
Variance 1			-0.04	-0.00	-2.42			-0.00	-1.19
Variance 2			-0.02	-0.00	-2.00			0.01	-0.17

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 6010D/6020B).

Grab Samples

HGWC-105

Grab

Product Name: Low-Flow System

Date: 2020-09-24 16:53:09

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	32 ft

Well Information:		Pumping Information:	
Well ID	HGWC-107	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6635369 L
Well Total Depth	38.07 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.80 ft	Total Volume Pumped	8.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:30:52	4199.98	19.42	6.11	421.68	6.37	15.82	0.26	77.86
Last 5	16:35:52	4499.97	19.42	6.11	417.92	6.87	15.82	0.27	77.59
Last 5	16:40:52	4799.97	19.42	6.11	417.85	5.69	15.82	0.26	78.07
Last 5	16:45:52	5099.96	19.43	6.11	416.90	5.42	15.82	0.27	78.29
Last 5	16:50:52	5399.95	19.42	6.11	418.92	4.59	15.82	0.27	78.03
Variance 0			0.01	0.00	-0.07			-0.01	0.49
Variance 1			0.00	0.00	-0.95			0.01	0.22
Variance 2			-0.01	-0.00	2.02			-0.01	-0.26

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 6010D/6020B).

Grab Samples

HGWC-107

Grab

Product Name: Low-Flow System

Date: 2020-09-25 16:16:35

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	27 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	26 ft

Well Information:		Pumping Information:	
Well ID	HGWC-109	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6055119 L
Well Total Depth	31.00 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	8.93 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:55:06	1200.02	19.18	6.79	382.53	4.25	8.96	0.27	-66.89
Last 5	16:00:06	1500.02	19.19	6.79	381.90	3.49	8.96	0.23	-67.30
Last 5	16:05:06	1800.02	19.19	6.78	381.16	2.65	8.96	0.18	-67.78
Last 5	16:10:06	2100.02	19.16	6.78	380.06	2.90	8.96	0.18	-68.14
Last 5	16:15:06	2400.02	19.15	6.79	379.15	1.90	8.96	0.17	-68.47
Variance 0			-0.00	-0.01	-0.75			-0.05	-0.48
Variance 1			-0.03	0.00	-1.10			-0.00	-0.36
Variance 2			-0.01	0.00	-0.91			-0.01	-0.33

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 6010D/6020B).

Grab Samples

HGWC-109

Grab

Product Name: Low-Flow System

Date: 2020-09-25 18:28:39

Project Information:		Pump Information:	
Operator Name	Vashish Taukoor	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	37 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	512733		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	35.26 ft

Well Information:		Pumping Information:	
Well ID	HGWC-117	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6501467 L
Well Total Depth	39.95 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	17.20 ft	Total Volume Pumped	36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	18:00:07	3600.01	18.61	6.02	537.41	6.50	17.20	0.09	257.27
Last 5	18:10:07	4200.01	18.57	6.01	537.61	5.50	17.20	0.09	243.12
Last 5	18:15:07	4500.01	18.54	6.02	537.51	5.40	17.20	0.09	239.64
Last 5	18:20:07	4800.01	18.55	6.01	537.96	5.80	17.20	0.09	232.48
Last 5	18:25:07	5100.00	18.53	6.01	539.42	5.20	17.20	0.09	228.00
Variance 0			-0.03	0.01	-0.10			-0.00	-3.48
Variance 1			0.00	-0.01	0.45			-0.00	-7.16
Variance 2			-0.02	0.01	1.46			-0.00	-4.48

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 6010D/6020B).

Grab Samples

HGWC-117

Grab

Product Name: Low-Flow System

Date: 2020-09-28 12:53:13

Project Information:		Pump Information:	
Operator Name	Thomas Kessler	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	HGWC-118	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6635369 L
Well Total Depth	46.85 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	13.90 ft	Total Volume Pumped	37 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:31:20	9899.92	22.67	7.03	538.18	9.43	13.95	0.30	40.23
Last 5	12:36:20	10199.92	22.67	7.03	538.95	9.22	13.95	0.30	40.71
Last 5	12:41:20	10499.92	22.74	7.03	537.68	8.01	13.95	0.30	41.44
Last 5	12:46:20	10799.91	22.74	7.03	539.65	7.86	13.95	0.30	41.88
Last 5	12:51:20	11099.91	22.63	7.03	539.07	8.42	13.95	0.31	42.13
Variance 0			0.07	-0.00	-1.27			0.00	0.73
Variance 1			0.00	-0.00	1.97			-0.00	0.44
Variance 2			-0.11	0.01	-0.59			0.00	0.25

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 6010D/6020B).

Grab Samples

HGWC-118

Grab

Low-Flow Test Report:

Test Date / Time: 11/10/2020 12:13:49 PM
Project: GP-Plant Hammond
Operator Name: Thomas Kessler

Location Name: HGWA-47 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 33.74 ft** **Initial Depth to Water: 7.75 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Pump Intake From TOC: 38.74 ft** **Estimated Total Volume Pumped: 5000 ml** **Flow Cell Volume: 90 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.02 ft**	**Instrument Used: Aqua TROLL 400** **Serial Number: 728550**

Test 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 6010D/6020B/7470A). Total depth = 43.35 ft.

Weather Conditions:
Cloudy, 70 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
11/10/2020 12:13 PM	00:00	7.38 pH	20.45 °C	388.76 µS/cm	0.31 mg/L	30.10 NTU	-18.6 mV	7.75 ft	200.00 ml/min
11/10/2020 12:18 PM	05:00	7.36 pH	20.44 °C	386.45 µS/cm	0.26 mg/L	23.50 NTU	-21.6 mV	7.77 ft	200.00 ml/min
11/10/2020 12:23 PM	10:00	7.36 pH	20.44 °C	387.85 µS/cm	0.23 mg/L	15.40 NTU	-23.9 mV	7.77 ft	200.00 ml/min
11/10/2020 12:28 PM	15:00	7.36 pH	20.44 °C	388.69 µS/cm	0.24 mg/L	10.60 NTU	-24.7 mV	7.77 ft	200.00 ml/min
11/10/2020 12:33 PM	20:00	7.34 pH	20.48 °C	390.01 µS/cm	0.22 mg/L	7.89 NTU	-25.5 mV	7.77 ft	200.00 ml/min
11/10/2020 12:38 PM	25:00	7.34 pH	20.59 °C	390.50 µS/cm	0.21 mg/L	4.34 NTU	-25.5 mV	7.77 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-47	Grab Samle

Low-Flow Test Report:

Test Date / Time: 11/11/2020 8:59:27 AM
Project: GP-Plant Hammond
Operator Name: Shawn Lin

Location Name: HGWA-48D **Well Diameter: 2 cm** **Screen Length: 10 m** **Top of Screen: 62.97 m** **Total Depth: 72.97 m** **Initial Depth to Water: 7.64 ft**	**Pump Type: Bladder** **Tubing Type: Polyethylene** **Pump Intake From TOC: 67.97 m** **Estimated Total Volume Pumped: 11.5 liter** **Flow Cell Volume: 90 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 5.1 ft**	**Instrument Used: Aqua TROLL 400** **Serial Number: 728634**

Test 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 6010D/6020B/7470A). Measured total depth = 74.02 ft.

Weather Conditions:
Cloudy, 70 degrees F

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	
11/11/2020 8:59 AM	00:00	7.44 pH	19.72 °C	395.75 µS/cm	3.37 mg/L	13.90 NTU	-23.3 mV	10.10 ft	200.00 ml/min
11/11/2020 9:00 AM	01:31	7.43 pH	19.60 °C	405.35 µS/cm	3.35 mg/L		-53.6 mV	7.64 ft	200.00 ml/min
11/11/2020 9:05 AM	06:31	7.42 pH	19.45 °C	403.04 µS/cm	2.73 mg/L	12.20 NTU	-24.9 mV	11.10 ft	200.00 ml/min
11/11/2020 9:10 AM	11:31	7.41 pH	19.41 °C	406.31 µS/cm	2.27 mg/L	10.60 NTU	-59.8 mV	12.29 ft	200.00 ml/min
11/11/2020 9:15 AM	16:31	7.42 pH	19.94 °C	407.13 µS/cm	1.97 mg/L	5.34 NTU	-25.3 mV	12.32 ft	100.00 ml/min
11/11/2020 9:20 AM	21:31	7.39 pH	20.11 °C	403.68 µS/cm	0.60 mg/L	4.52 NTU	-63.4 mV	12.31 ft	100.00 ml/min
11/11/2020 9:25 AM	26:31	7.39 pH	20.07 °C	402.50 µS/cm	0.52 mg/L	3.23 NTU	-26.8 mV	12.20 ft	100.00 ml/min
11/11/2020 9:30 AM	31:31	7.40 pH	19.84 °C	401.61 µS/cm	0.46 mg/L	3.74 NTU	-24.1 mV	12.29 ft	100.00 ml/min
11/11/2020 9:35 AM	36:31	7.40 pH	19.67 °C	403.70 µS/cm	0.96 mg/L	3.25 NTU	-54.2 mV	12.50 ft	160.00 ml/min
11/11/2020 9:40 AM	41:31	7.40 pH	19.84 °C	402.80 µS/cm	0.71 mg/L	3.09 NTU	-54.3 mV	12.58 ft	150.00 ml/min

11/11/2020 9:45 AM	46:31	7.40 pH	19.80 °C	402.54 µS/cm	0.65 mg/L	2.81 NTU	-22.3 mV	12.63 ft	150.00 ml/min
11/11/2020 9:50 AM	51:31	7.40 pH	19.80 °C	402.08 µS/cm	0.63 mg/L	1.96 NTU	-21.8 mV	12.69 ft	150.00 ml/min
11/11/2020 9:55 AM	56:31	7.41 pH	19.82 °C	402.72 µS/cm	0.58 mg/L	1.92 NTU	-21.9 mV	12.74 ft	150.00 ml/min
11/11/2020 10:00 AM	01:01:31	7.40 pH	19.85 °C	401.93 µS/cm	0.55 mg/L	2.11 NTU	-21.6 mV	12.74 ft	150.00 ml/min
11/11/2020 10:05 AM	01:06:31	7.40 pH	19.80 °C	402.42 µS/cm	0.53 mg/L	2.33 NTU	-52.6 mV	12.74 ft	150.00 ml/min

Samples

Sample ID:	Description:
HGWA-48D	Grab Sample

Low-Flow Test Report:

Test Date / Time: 12/15/2020 9:50:35 AM
Project: GP-Plant Hammond
Operator Name: Shawn Lin

Location Name: HGWA-47 **Well Diameter: 2 in** **Screen Length: 10 ft** **Top of Screen: 33.74 ft** **Total Depth: 43.74 ft** **Initial Depth to Water: 7.22 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Pump Intake From TOC: 38.74 ft** **Estimated Total Volume Pumped: 5 liters** **Flow Cell Volume: 90 ml** **Final Flow Rate: 200 ml/min Final Draw Down: 0.02 ft**	**Instrument Used: Aqua TROLL 400** **Serial Number: 728648**

Test 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 6010D/6020B/7470A). Total depth = 43.71 ft.

Weather Conditions:
Sunny, Cold

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 0.2	+/- 5	+/- 10	+/- 0.3	
12/15/2020 9:50 AM	00:00	7.24 pH	16.13 °C	402.31 µS/cm	0.24 mg/L		-13.5 mV	7.22 ft	200.00 ml/min
12/15/2020 9:55 AM	05:00	7.25 pH	16.27 °C	395.52 µS/cm	0.20 mg/L	2.56 NTU	-28.0 mV	7.24 ft	200.00 ml/min
12/15/2020 10:00 AM	10:00	7.26 pH	16.49 °C	395.78 µS/cm	0.18 mg/L	2.58 NTU	-28.9 mV	7.24 ft	200.00 ml/min
12/15/2020 10:05 AM	15:00	7.27 pH	16.72 °C	394.06 µS/cm	0.16 mg/L	2.77 NTU	-26.5 mV	7.24 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-47	Grab Sample

Low-Flow Test Report:

Test Date / Time: 12/15/2020 11:05:08 AM
Project: GP-Plant Hammond
Operator Name: Shawn Lin

Location Name: HGWA-48D **Well Diameter: 2 ft** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 62.97 ft** **Initial Depth to Water: 7.14 ft**	**Pump Type: Bladder** **Tubing Type: Polyethylene** **Pump Intake From TOC: 67.97 ft** **Estimated Total Volume Pumped: 21 liters** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min Final Draw Down: 2.41 ft**	**Instrument Used: Aqua TROLL 400** **Serial Number: 728648**

Test 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 6010D/6020B/7470A). Total depth = 74.09 ft.

Weather Conditions:
Sunny, Cold

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 0.2	+/- 5	+/- 10	+/- 0.3	
12/15/2020 11:05 AM	00:00	7.32 pH	17.70 °C	411.15 µS/cm	0.27 mg/L		-42.8 mV	7.14 ft	200.00 ml/min
12/15/2020 11:10 AM	05:00	7.31 pH	17.77 °C	400.46 µS/cm	0.21 mg/L	10.34 NTU	-50.2 mV	10.10 ft	200.00 ml/min
12/15/2020 11:15 AM	10:00	7.31 pH	17.72 °C	390.64 µS/cm	0.17 mg/L	8.82 NTU	-75.8 mV	10.73 ft	200.00 ml/min
12/15/2020 11:20 AM	15:00	7.33 pH	16.99 °C	379.54 µS/cm	0.18 mg/L	8.68 NTU	-57.8 mV	10.68 ft	100.00 ml/min
12/15/2020 11:25 AM	20:00	7.33 pH	16.58 °C	376.75 µS/cm	0.22 mg/L	5.66 NTU	-78.6 mV	10.39 ft	100.00 ml/min
12/15/2020 11:30 AM	25:00	7.32 pH	16.72 °C	371.30 µS/cm	0.23 mg/L	5.15 NTU	-79.1 mV	10.26 ft	100.00 ml/min
12/15/2020 11:35 AM	30:00	7.33 pH	16.89 °C	364.80 µS/cm	0.24 mg/L	5.26 NTU	-57.2 mV	10.12 ft	100.00 ml/min
12/15/2020 11:40 AM	35:00	7.33 pH	17.01 °C	369.94 µS/cm	0.23 mg/L	5.15 NTU	-55.7 mV	10.00 ft	100.00 ml/min
12/15/2020 11:45 AM	40:00	7.34 pH	17.14 °C	370.08 µS/cm	0.23 mg/L	5.83 NTU	-75.6 mV	9.70 ft	100.00 ml/min
12/15/2020 11:50 AM	45:00	7.33 pH	17.63 °C	378.42 µS/cm	0.21 mg/L	8.24 NTU	-77.4 mV	10.10 ft	150.00 ml/min
12/15/2020 11:55 AM	50:00	7.34 pH	17.66 °C	376.63 µS/cm	0.17 mg/L	10.36 NTU	-57.3 mV	10.32 ft	150.00 ml/min
12/15/2020 12:00 PM	55:00	7.36 pH	16.99 °C	361.42 µS/cm	0.17 mg/L	11.00 NTU	-76.8 mV	10.11 ft	100.00 ml/min

12/15/2020 12:05 PM	01:00:00	7.36 pH	17.03 °C	361.62 µS/cm	0.18 mg/L	5.03 NTU	-56.1 mV	10.00 ft	100.00 ml/min
12/15/2020 12:10 PM	01:05:00	7.36 pH	17.16 °C	358.90 µS/cm	0.18 mg/L	6.32 NTU	-76.2 mV	9.97 ft	100.00 ml/min
12/15/2020 12:15 PM	01:10:00	7.36 pH	17.16 °C	375.00 µS/cm	0.16 mg/L	6.01 NTU	-76.8 mV	9.94 ft	100.00 ml/min
12/15/2020 12:20 PM	01:15:00	7.36 pH	17.29 °C	372.74 µS/cm	0.15 mg/L	6.62 NTU	-55.8 mV	9.94 ft	100.00 ml/min
12/15/2020 12:25 PM	01:20:00	7.36 pH	17.34 °C	372.81 µS/cm	0.15 mg/L	6.76 NTU	-54.6 mV	9.94 ft	100.00 ml/min
12/15/2020 12:30 PM	01:25:00	7.37 pH	17.25 °C	369.51 µS/cm	0.14 mg/L	7.02 NTU	-53.8 mV	9.94 ft	100.00 ml/min
12/15/2020 12:35 PM	01:30:00	7.37 pH	17.22 °C	368.91 µS/cm	0.13 mg/L	7.44 NTU	-74.4 mV	9.79 ft	100.00 ml/min
12/15/2020 12:40 PM	01:35:00	7.37 pH	17.21 °C	370.94 µS/cm	0.14 mg/L	5.56 NTU	-54.1 mV	9.70 ft	100.00 ml/min
12/15/2020 12:45 PM	01:40:00	7.37 pH	17.39 °C	374.61 µS/cm	0.13 mg/L	7.61 NTU	-53.5 mV	9.70 ft	100.00 ml/min
12/15/2020 12:50 PM	01:45:00	7.38 pH	17.48 °C	378.96 µS/cm	0.13 mg/L	7.51 NTU	-74.4 mV	9.70 ft	100.00 ml/min
12/15/2020 12:55 PM	01:50:00	7.38 pH	17.43 °C	376.44 µS/cm	0.12 mg/L	8.14 NTU	-53.9 mV	9.70 ft	100.00 ml/min
12/15/2020 1:00 PM	01:55:00	7.38 pH	17.38 °C	375.65 µS/cm	0.12 mg/L	7.89 NTU	-74.2 mV	9.65 ft	100.00 ml/min
12/15/2020 1:05 PM	02:00:00	7.38 pH	17.44 °C	371.09 µS/cm	0.12 mg/L	8.09 NTU	-53.6 mV	9.62 ft	100.00 ml/min
12/15/2020 1:10 PM	02:05:00	7.38 pH	17.43 °C	370.02 µS/cm	0.12 mg/L	8.69 NTU	-74.1 mV	9.59 ft	100.00 ml/min
12/15/2020 1:15 PM	02:10:00	7.39 pH	17.53 °C	371.21 µS/cm	0.11 mg/L	8.75 NTU	-53.5 mV	9.59 ft	100.00 ml/min
12/15/2020 1:20 PM	02:15:00	7.39 pH	17.61 °C	373.50 µS/cm	0.11 mg/L	9.26 NTU	-74.2 mV	9.59 ft	100.00 ml/min
12/15/2020 1:25 PM	02:20:00	7.39 pH	17.61 °C	369.25 µS/cm	0.11 mg/L	8.95 NTU	-53.3 mV	9.56 ft	100.00 ml/min
12/15/2020 1:30 PM	02:25:00	7.39 pH	17.52 °C	369.40 µS/cm	0.10 mg/L	9.41 NTU	-73.9 mV	9.56 ft	100.00 ml/min
12/15/2020 1:35 PM	02:30:00	7.39 pH	17.52 °C	370.54 µS/cm	0.10 mg/L	9.70 NTU	-74.6 mV	9.55 ft	100.00 ml/min
12/15/2020 1:40 PM	02:35:00	7.39 pH	17.39 °C	370.57 µS/cm	0.10 mg/L	9.30 NTU	-52.9 mV	9.55 ft	100.00 ml/min
12/15/2020 1:45 PM	02:40:00	7.39 pH	17.57 °C	373.35 µS/cm	0.10 mg/L	9.68 NTU	-74.0 mV	9.55 ft	100.00 ml/min
12/15/2020 1:50 PM	02:45:00	7.39 pH	17.64 °C	367.76 µS/cm	0.09 mg/L	9.59 NTU	-74.9 mV	9.55 ft	100.00 ml/min
12/15/2020 1:55 PM	02:50:00	7.39 pH	17.75 °C	366.78 µS/cm	0.09 mg/L	9.53 NTU	-53.4 mV	9.55 ft	100.00 ml/min

Samples

Sample ID:	Description:
HGWA-48D	Grab Sample

CALIBRATION REPORTS

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Chad RUSSO | Date: 7/21/2026 | Time (start): 1340 | Time (finish): 1415

smarTroll SN: 613229 | Turbidity Meter Type: LaMotte 2020we | SN: 2283-2612

Weather Conditions: 90°F SUNNY | Facility and Unit: Hammond | Project No: GNJ6588

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20910025 8/2021	24.6	~~4418~~ 4490	4418	4436	+/- 5%	(Yes) No	
pH (4)			4	4.39	4	+/- 0.1 SU	(Yes) No	
pH (7)	19340057 8/2021	27.1	7	7.22	7	+/- 0.1 SU	(Yes) No	
pH (10)	19320.02 8/2021	27.1	10	10.08	10	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460.67 8/2021	30	228	191	228	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100	96.4	96.4	+/- 6% saturation	(Yes) No	
Turbidity 0 NTU			0	0.57	0	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			—	—	—	+/- 0.5 NTU	Yes No	No Standard
Turbidity 10 NTU			10	10.07	10.03	+/- 0.5 NTU	(Yes) No	

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EQUIPMENT CALIBRATION LOG

Field Technician: A. Reeder | Date: 08/25/2020 | Time (start): 0715 | Time (finish): 0745

smarTroll SN: 597519 | Turbidity Meter Type: LaMotte 2020we | SN: 2279

Weather Conditions: Cloudy | Facility and Unit: Plant Hammond | Project No.: 6V6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 08/2021	25.7	4490	4451	4490	+/- 5 %	Yes / No	
pH (4)		25.6	4.00	4.53	4.00	+/- 0.1 SU	Yes / No	
pH (7)	08/2021 19340057	25.8	7.00	7.54	7.00	+/- 0.1 SU	Yes / No	
pH (10)	08/2021 19320102	26.0	10.00	10.42	10.00	+/- 0.1 SU	Yes / No	
ORP (mV)	08/2021 19460167	26.1	+228	190.8	228.0	+/- 20mV	Yes / No	
DO (%) (1pt, 100% water saturated air cal)			100 %	95.4	100%	+/- 6 % saturation	Yes / No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	Yes / No	
Turbidity 1 NTU			1	1.65	1.00	+/- 0.5 NTU	Yes / No	
Turbidity 10 NTU			10	9.64	10.00	+/- 0.5 NTU	Yes / No	

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EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 8/25/20

Time (start): 7:30

Time (finish): 0815

smarTroll SN: 643819

Turbidity Meter Type: LaMotte 2020we

SN: 2009-1416

Weather Conditions: 75°F, overcast

Facility and Unit: Plant Hammond

Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 6/2021	24.9°	~~4.49~~ 4490 µS/cm	44144	44144	+/- 5 %	Yes / No	
pH (4)			4.00	4.35	4.0	+/- 0.1 SU	Yes / No	
pH (7)	19341005T 8/2021	24.8	7.00	7.29	7.0	+/- 0.1 SU	Yes / No	
pH (10)	19320102 8/21	24.7	10.00	10.14	10.21	+/- 0.1 SU	Yes / No	
ORP (mV)	19460967 8/21	24.9	+228mV	209.6	209.4	+/- 20mV	Yes / No	
DO (%) (1pt, 100% water saturated air cal)			100%	96.2	96.8	+/- 6 % saturation	Yes / No	
Turbidity 0 NTU			0	-.03/0	0	+/- 0.5 NTU	Yes / No	
Turbidity 1 NTU			1	.67	1	+/- 0.5 NTU	Yes / No	
Turbidity 10 NTU			10	10.00	10	+/- 0.5 NTU	Yes / No	

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EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Reeder

Date: 8-26-2020

Time (start): 0810

Time (finish): 0900

smarTroll SN: 597519

Turbidity Meter Type: ~~2279~~ Lamotte 2020we

SN: 2279

Weather Conditions: Cloudy

Facility and Unit: Plant Hammond

Project No.: GV6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20100025 08/21	24.2	4490	4398	4490	+/- 5 %	Yes / No	
pH (4)			4.0	4.56	4.0	+/- 0.1 SU	Yes / No	
pH (7)	08/2021 19340057	24.3	7.0	7.53	7.0	+/- 0.1 SU	Yes / No	
pH (10)	08/2021 19320102	24.4	10.0	10.37	10.0	+/- 0.1 SU	Yes / No	
ORP (mV)	08/2021 19460167	24.6	+228	215	228	+/- 20mV	Yes / No	
DO (%) (1pt, 100% water saturated air cal)	[redacted]		100%	94.6%	100%	+/- 6 % saturation	Yes / No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	Yes / No	
Turbidity 1 NTU			1	1.25	1.0	+/- 0.5 NTU	Yes / No	
Turbidity 10 NTU			10	9.58	10.00	+/- 0.5 NTU	Yes / No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kressler

Date: 8/26/20

Time (start): 11:15

Time (finish): 11:50

smarTroll SN: 643819

Turbidity Meter Type: La motte

SN: 2009-1916

Weather Conditions: overcast, 80°F

Facility and Unit: Hammond

Project No.: GW0581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20210025 08/2021	25.2	4490	4480	4490	+/- 5 %	(Yes) No	
pH (4)			4.00	4.40	4.40 4.39	+/- 0.1 SU	(Yes) No	
pH (7)	~~19340057~~ 19340057 8/21	25.8	7.0	7.29	7.30	+/- 0.1 SU	(Yes) No	
pH (10)	19320102 8/21	26.0	10.00	10.19	10.26	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460167	26.1	+228	201.2	203.7	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100	97.5	98.2	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0.0	0.47	0	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	3.33	0.78	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	9.39	10.25	+/- 0.5 NTU	(Yes) No	

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EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler | Date: 8/27/2020 | Time (start): 8:12 | Time (finish): 0900

smarTroll SN: 597519 | Turbidity Meter Type: LaMotte 2020we | SN: 2279

Weather Conditions: clear, 80°F | Facility and Unit: Hammond | Project No.: GWGS81

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 8/21	24.1	4490	4447	4418	+/- 5 %	Yes No	
pH (4)			4.0	4.60	~~4.60~~ 4.0	+/- 0.1 SU	Yes No	
pH (7)	19340057 8/21	24.8	7.0	7.52	~~7.52~~ 7.0	+/- 0.1 SU	Yes No	
pH (10)	19320102 8/21	25.1	10.0	10.35	~~10.41~~ 10.0	+/- 0.1 SU	Yes No	
ORP (mV)	19460167 8/21	25.1	228	148.8	189.2	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)	[redacted]		100	83.9	100.1	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1	1.81	1.31	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			0	~~7.8~~ 7.8	10	+/- 0.5 NTU	Yes No	

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EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo | Date: 8/27/2020 | Time (start): 0830 | Time (finish): 0845

smarTroll SN: 643819 | Turbidity Meter Type: LaMotte 2020we | SN: 7009-1416

Weather Conditions: 75°F Sunny | Facility and Unit: Hammond | Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	2607025 8/2021	25.8	4490	4413	4404	+/- 5 %	(Yes) No	
pH (4)			4	4.39	4	+/- 0.1 SU	(Yes) No	
pH (7)	19340057 8/2021	25.9	7	7.27	7	+/- 0.1 SU	(Yes) No	
pH (10)	M329107 8/2021	26.1	10	10.2	10	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460467 8/2021	26.1	228	201.6	228	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			108	93.1	95.6	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0.5	0.5	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	1.41	1.41	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	10.43	10.43	+/- 0.5 NTU	(Yes) No	

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EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Wessler | Date: 9/18/20 | Time (start): 0719 | Time (finish): 0800

smarTroll SN: 646773 | Turbidity Meter Type: Lamotte 2020 | SN: 70009

Weather Conditions: Sunny, 70° | Facility and Unit: Hammond | Project No.: 61W6584

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 08/21	22.0	4490	4386	4490	+/- 5 %	(Yes) No	
pH (4)			4.0	4.80	4.0	+/- 0.1 SU	(Yes) No	
pH (7)	14340057 08/21	22.3	7.00	7.63	7.00	+/- 0.1 SU	(Yes) No	
pH (10)	19320102 08/21	22.4	10.00	10.414	10.00	+/- 0.1 SU	(Yes) No	
ORP (mV)	1946167 08/21	22.5	228	193.4	228	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100	96.1	100	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	0.56	0.88	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	15.00	10	+/- 0.5 NTU	(Yes) No	

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EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Hessler | Date: 9/22/20 | Time (start): 0845 | Time (finish): 0915

smarTroll SN: 646773 | Turbidity Meter Type: Lamotte 2020 | SN: 7009

Weather Conditions: Sunny 52° | Facility and Unit: Hammond | Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025	13.4	1440	4345	4440	+/- 5 %	Yes / No	
pH (4)	08/21		4.00	4.95	4.00	+/- 0.1 SU	Yes / No	
pH (7)	19340057 08/21	14.4	7.00	7.60	7.00	+/- 0.1 SU	Yes / No	
pH (10)	19370107 08/21	14.9	10.0	10.30	10.0	+/- 0.1 SU	Yes / No	
ORP (mV)	19416017 08/21	15.0	~~228~~ 228	205	228	+/- 20mV	Yes / No	
DO (%) (1pt, 100% water saturated air cal)			100	92	100	+/- 6 % saturation	Yes / No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	Yes / No	
Turbidity 1 NTU			1	.56	1	+/- 0.5 NTU	Yes / No	
Turbidity 10 NTU			10	6	10	+/- 0.5 NTU	Yes / No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Hessler

Date: 9/24/20

Time (start): 0720

Time (finish): 0800

smarTroll SN: 646775

Turbidity Meter Type: Lamotte 2020we

SN: 7009

Weather Conditions: Raining 58°

Facility and Unit: Hammond

Project No.: CLW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 08/21	17.9	4490	4385	4490	+/- 5 %	(Yes) No	
pH (4)			4.0	4.94	4.0	+/- 0.1 SU	(Yes) No	
pH (7)	19320057 08/21	18.7	7.0	7.63	7.0	+/- 0.1 SU	(Yes) No	
pH (10)	19320102 08/21	18.9	10.0	10.37	10.0	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460167 08/21	14.0	228	197.2	228	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100%	94.0%	100%	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	2.00	0.04	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	0.28	1.08	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	14.02	9.71	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Hessler | Date: 9/25/20 | Time (start): 0900 | Time (finish): 0930

smarTroll SN: 646775 | Turbidity Meter Type: Lamotte 2020 | SN: 7009

Weather Conditions: Rainy, 66° | Facility and Unit: Hammond | Project No: GWGS81

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	200100025 08/21	18.9	4490	4304	~~4490~~ 4492	+/- 5 %	Yes / No	
pH (4)			4.0	4.92	4.0	+/- 0.1 SU	Yes / No	
pH (7)	19340054 08/21	19.2	7.0	7.59	7.0	+/- 0.1 SU	Yes / No	
pH (10)	19320102 08/21	19.4	10.00	10.39	10.00	+/- 0.1 SU	Yes / No	
ORP (mV)	19460167 08/21	19.7	228	197.0	~~236.3~~ 228	+/- 20mV	Yes / No	
DO (%) (1pt, 100% water saturated air cal)	[redacted]		100	93.1	100	+/- 6 % saturation	Yes / No	
Turbidity 0 NTU			0	0.42	0	+/- 0.5 NTU	Yes / No	
Turbidity 1 NTU			1	0.144	1.04	+/- 0.5 NTU	Yes / No	
Turbidity 10 NTU			10	9.82	10.37	+/- 0.5 NTU	Yes / No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 9/28/20

Time (start): 0815

Time (finish): 0848

smarTroll SN: 646775

Turbidity Meter Type: Lamotte 2020we

SN: 7009

Weather Conditions: Sunny, 68°

Facility and Unit: Hammond

Project No.: 60606581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 08/21	22.1	4490	4421.18	4490	+/- 5 %	Yes / No	
pH (4)			4.00	4.87	4.0	+/- 0.1 SU	Yes / No	
pH (7)	19340054 08/21	22.8	7.00	7.58	7.0	+/- 0.1 SU	Yes / No	
pH (10)	19320402 08/21	23.1	10.00	10.42	10.00	+/- 0.1 SU	Yes / No	
ORP (mV)	19460487 08/21	23.3	228	189.2	228	+/- 20mV	Yes / No	
DO (%) (1pt, 100% water saturated air cal)	[redacted]	[redacted]	100	95.9	99.8	+/- 6 % saturation	Yes / No	
Turbidity 0 NTU	[redacted]	[redacted]	0	0.01	0.00	+/- 0.5 NTU	Yes / No	
Turbidity 1 NTU	[redacted]	[redacted]	1	1.29	1.28	+/- 0.5 NTU	Yes / No	
Turbidity 10 NTU	[redacted]	[redacted]	10	6.73	9.85	+/- 0.5 NTU	Yes / No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo | Date: 9/18/2020 | Time (start): 0755 | Time (finish): 0820

smarTroll SN: 547519 | Turbidity Meter Type: LaMotte 2020we | SN: 1510-14111

Weather Conditions: 70°F Cloudy | Facility and Unit: Hammond | Project No: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20160025 8/2021	22.9	4490	4413	4490	+/- 5 %	(Yes) No	
pH (4)			4	4.30	4	+/- 0.1 SU	(Yes) No	
pH (7)	19340057 8/2021	23.1	7	7.11	7	+/- 0.1 SU	(Yes) No	
pH (10)	19320162 9/2020	23.3	10	9.88	10	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460167 8/2021	23.3	228	205	230.3	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100	90.9	100	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	1.4	1.4	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	12.52	10.11	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 9/22/2020

Time (start): 0920

Time (finish): 0950

smarTroll SN: 597519

Turbidity Meter Type: LaMotte 2026we

SN: 1510-4111

Weather Conditions: 60°F sunny

Facility and Unit: Hamworthy

Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	26010625 8/2021	19.2	4490	4264	4490	+/- 5 %	(Yes) No	
pH (4)			4	4.44	4	+/- 0.1 SU	(Yes) No	
pH (7)	19340857 8/2021	18.4	7	7.13	7	+/- 0.1 SU	(Yes) No	
pH (10)	19320102 8/2021	18.3	10	9.85	10	+/- 0.1 SU	(Yes) No	
ORP (mV)	19416167 8/2021	18.2	228	256.9	232.7	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100	91.4	100.6	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	0.88	0.88	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	8.98	10.15	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 9/25/2020

Time (start): 0920

Time (finish): 0940

smarTroll SN: 597519

Turbidity Meter Type: LaMotte 2020we

SN: 1510-4111

Weather Conditions: 60°F raining

Facility and Unit: Hammond

Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	2001025 9/2021	20.5	4490	4400	4490	+/- 5 %	(Yes) No	
pH (4)			4	4.5	4	+/- 0.1 SU	(Yes) No	
pH (7)	19340057 8/2021	20.5	7	6.92	7	+/- 0.1 SU	(Yes) No	
pH (10)	19320102 8/2021	20.8	10	9.71	10	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460167 8/2021	21	228	205	234.8	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)	[redacted]		100	89.1	100	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	1.32	1.32	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	10.71	10.34	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 9/25/2020

Time (start): 0910

Time (finish): 0941

smarTroll SN: 597519

Turbidity Meter Type: LaMotte

SN: 1510-4111

Weather Conditions: 65°F overcast

Facility and Unit: Hammond

Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 8/2021	21.0	4490	4364	4490	+/- 5 %	Yes No	
pH (4)			4	4.51	4	+/- 0.1 SU	Yes No	
pH (7)	19340057 8/2021	21.0	7	6.86	7	+/- 0.1 SU	Yes No	
pH (10)	19320162 8/2021	21.2	10	8.55	10	+/- 0.1 SU	Yes No	
ORP (mV)	19460167 8/2021	21.3	228	243.5	235.3	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	90.3	100.3	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1	1.08	1.08	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10	7.62	10.06	+/- 0.5 NTU	Yes No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: VISHISH THAKKER

Date: 9-18-20

Time (start): 07 25

Time (finish): 07 42

smarTroll SN: 512733

Turbidity Meter Type: LaMOTTE 2020WE

SN: 2949-0413

Weather Conditions: 70F. OVERCAST

Facility and Unit: HAMMOND

Project No.: GW0581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	2001 0825 08/2021	21.1	4490	4382	4490	+/- 5 %	(Yes) No	
pH (4)			4	4.26	4.00	+/- 0.1 SU	(Yes) No	
pH (7)	193A0057 08/2021	21.9	7	7.08	7.00	+/- 0.1 SU	(Yes) No	
pH (10)	19320102 08/2021	22.2	10	10.02	10.00	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460167 08/21	22.3	228	223	228	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)	[redacted]		100	91.3	100	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0.00	0	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	1.00	1.00	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	10.09	10.00	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: NITISH THAKUR   Date: 9-22-20   Time (start): 0915   Time (finish): 0935

smarTroll SN: 512 733   Turbidity Meter Type: LAMOTTE 2020we   SN: 2949-0413

Weather Conditions: 55°F, SUNNY   Facility and Unit: HAMMOND   Project No.: GW6781

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 8/21	17.0	4490	4276	4490	+/- 5 %	(Yes) No	
pH (4)			4	4.37	4.00	+/- 0.1 SU	(Yes) No	
pH (7)	19340057 8/21	17.1	7	7.17	7.00	+/- 0.1 SU	(Yes) No	
pH (10)	19320102 8/21	17.2	10	9.96	10.00	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460167 8/21	17.3	228	223.5	228	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100%	90.9%	100%	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0.01	0.00	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	1.01	1.00	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	9.78	10.00	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH THAKKAR

Date: 9-24-2020

Time (start): 0745

Time (finish): 0815

smarTroll SN: 512733

Turbidity Meter Type: LaMOTTE 2020we

SN: 2949-0413

Weather Conditions: 60°F, RAIN

Facility and Unit: HANNAH

Project No.: GW0581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	2001025 8/21	17.5	4490	4450	4490	+/- 5 %	(Yes) No	
pH (4)			4	4.36	4.00	+/- 0.1 SU	(Yes) No	
pH (7)	1834005 8/21	18.3	7	7.16	7.00	+/- 0.1 SU	(Yes) No	
pH (10)	1832102 8/21	19.6	10	9.94	10.00	+/- 0.1 SU	(Yes) No	
ORP (mV)	1946167 8/21	19.4	228	193.9	228	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100	93.0	100	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0.02	0	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	1.23	1	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	10.27	10	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: YASHISH TAMHANE

Date: 9-25-20

Time (start): 0700

Time (finish): 0920

smarTroll SN: 512733

Turbidity Meter Type: LAMOTTE 2020WE

SN: 2949-603

Weather Conditions: 68°F, PARTLY CLOUDY

Facility and Unit: HAMMOND

Project No.: G[illegible]

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	2001 0025 8/21	19.3	4490	4321	4490	+/- 5 %	(Yes) No	
pH (4)			4	4.36	4.00	+/- 0.1 SU	(Yes) No	
pH (7)	1934057 8/21	19.3	7	7.10	7.00	+/- 0.1 SU	(Yes) No	
pH (10)	1932002 8/21	19.4	10	9.97	10.00	+/- 0.1 SU	(Yes) No	
ORP (mV)	[redacted] 8/21		228	207.6	228	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)	[redacted]	[redacted]	100	94.1	100	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU	[redacted]	[redacted]	0	0.00	0.00	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU	[redacted]	[redacted]	1	1.26	1.00	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU	[redacted]	[redacted]	10	9.77	10.00	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Reeder | Date: 9-28-2020 | Time (start): 1330 | Time (finish): 1405

smarTroll SN: 512733 | Turbidity Meter Type: LaMotte | SN: 2949

Weather Conditions: Sunny Hi 82/Lo 71 | Facility and Unit: Hammond | Project No: GV6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 08/2021	27.5	4490	4341	4490	+/- 5 %	Yes / No	
pH (4)		27.6	4.00	4.25	4.00	+/- 0.1 SU	Yes / No	
pH (7)	08/2021 19340057	26.7	7.00	7.11	7.00	+/- 0.1 SU	Yes / No	
pH (10)	08/2021 19320102	26.2	10.00	10.08	10.00	+/- 0.1 SU	Yes / No	
ORP (mV)	19460167	26.6	228.0	197.4	228.0	+/- 20mV	Yes / No	
DO (%) (1pt, 100% water saturated air cal)	[redacted]	[redacted]	100%	97.7	100%	+/- 6 % saturation	Yes / No	
Turbidity 0 NTU	[redacted]	[redacted]	0	0	0	+/- 0.5 NTU	Yes / No	
Turbidity 1 NTU	[redacted]	[redacted]	1.00	0.99	1.00	+/- 0.5 NTU	Yes / No	
Turbidity 10 NTU	[redacted]	[redacted]	10	10	10	+/- 0.5 NTU	Yes / No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn LTY

Date: 11/10/2020

Time (start): 11:55

Time (finish): 12:15

smarTroll SN: 728634

Turbidity Meter Type: LaMotte 2020 We

SN: 2953

Weather Conditions: Cloudy

Facility and Unit: Hammond

Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading (SU) 11/10/2020	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	200100025 08/2021	22.29	4490	4568.3	4322.9 4487.2	+/- 5 %	Yes No	
pH (4)			4.00	4.03	4.00	+/- 0.1 SU	Yes No	
pH (7)	19340057 08/2021	22.04	7.00	7.05	7.00	+/- 0.1 SU	Yes No	
pH (10)	19329102 08/2021	22.04	10.00	9.97	10.00	+/- 0.1 SU	Yes No	
ORP (mV)	19460167 08/2021	22.14	228	240.7	227.6	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	101.3	99.83	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1	0.92	0.97	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10	11.18	9.85	+/- 0.5 NTU	Yes No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin | Date: 11/11/2020 | Time (start): 7:30 | Time (finish): 7:45

smarTroll SN: 728634 | Turbidity Meter Type: LaMotte 2020we | SN: 2953

Weather Conditions: cloudy | Facility and Unit: Hammond | Project No.: GW658

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	200/0025	22.84	4490	4574.0	4508.1	+/- 5 %	(Yes) No	
pH (4)	08/2021		4.00	4.51	4.00	+/- 0.1 SU	(Yes) No	
pH (7)	19340057 08/2021	22.61	7.00	6.99	7.00	+/- 0.1 SU	(Yes) No	
pH (10)	19320102 08/2021	22.52	10.00	10.01	10.00	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460167 08/2021	22.36	228	226.9	228.0	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100	98.59	99.95	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1	0.98	0.99	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10	10.99	10.03	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 11/10/2020

Time (start): 0738

Time (finish): 0808

smarTroll SN: 728550

Turbidity Meter Type: LaMotte 2020we

SN: 1659-0412

Weather Conditions: Overcast, 70°

Facility and Unit: Plant Hammond

Project No.: GWG581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 / 08/21	25°	~~4490~~ 4.00	~~5042~~ 3.80	4490	+/- 5 %	Yes No	Aquatroll 400
pH (4)			4.00	3.81	4.00	+/- 0.1 SU	Yes No	
pH (7)	19340057 08/21	20.61°	7.00	7.12	~~7.00~~ 7.02	+/- 0.1 SU	Yes No	
pH (10)	19320102 08/21	20.66°	10	10.15	~~10.00~~ 10.04	+/- 0.1 SU	Yes No	
ORP (mV)	19460167 08/21	20.79	228	226.8	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	99.93%	100%	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0.54	0.38	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	1.00	1.00	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00	7.67	9.93	+/- 0.5 NTU	Yes No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 11/11/20

Time (start): 745

Time (finish): 0815

smarTroll SN: 728550

Turbidity Meter Type: Lamotte 2020we

SN: 1859-0412

Weather Conditions: overcast, 70°

Facility and Unit: Plant Hammond

Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 08/21	20.67	4490	4495.4	4490	+/- 5 %	(Yes) No	
pH (4)			4.0	4.15	~~4.00~~ 4.00	+/- 0.1 SU	(Yes) No	
pH (7)	19340057 08/21	20.96	7.0	7.07	~~7.02~~ 7.02	+/- 0.1 SU	(Yes) No	
pH (10)	19320402 08/21	21.03	10.0	10.08	10.04	+/- 0.1 SU	(Yes) No	
ORP (mV)	19460167	21.14	228	225.9	228	+/- 20mV	(Yes) No	
DO (%) (1pt, 100% water saturated air cal)			100%	99.15%	100%	+/- 6 % saturation	(Yes) No	
Turbidity 0 NTU			0	0.79	0.01	+/- 0.5 NTU	(Yes) No	
Turbidity 1 NTU			1.00	0.52	0.78	+/- 0.5 NTU	(Yes) No	
Turbidity 10 NTU			10.00	10.91	10.68	+/- 0.5 NTU	(Yes) No	

Geosyntec consultants

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin

Date: 12/15/2020

Time (start): 8:30

Time (finish): 8:55

smarTroll SN: 72864B

Turbidity Meter Type: LaMotte 2020we

SN: 1859-0412

Weather Conditions: Sunny, 32°F

Facility and Unit: Hammond

Project No.: GW1581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	#2001025 08/2021	8.35	4490	4774.8	4469.6	+/- 5 %	Yes / No	
pH (4)			4.000	4.00	4.00	+/- 0.1 SU	Yes / No	
pH (7)	#1934057 08/2021	8.48	7.00	~~7.00~~ 7.11	7.00	+/- 0.1 SU	Yes / No	
pH (10)	#1932102 08/2021	8.35	10.00	10.24	10.10	+/- 0.1 SU	Yes / No	
ORP (mV)	#1946167 08/2021	8.21	228	247.3	227.9	+/- 20mV	Yes / No	
DO (%) (1pt, 100% water saturated air cal)			100	99.87	100.54	+/- 6 % saturation	Yes / No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	Yes / No	
Turbidity 1 NTU			1	0.87	1.00	+/- 0.5 NTU	Yes / No	
Turbidity 10 NTU			10	10.27	9.98	+/- 0.5 NTU	Yes / No	

APPENDIX D

Statistical Analysis Report

GROUNDWATER STATS CONSULTING

February 23, 2021

Southern Company Services
Attn: Ms. Kristen Jurinko
241 Ralph McGill Blvd. NE, Bin 10160
Atlanta, Georgia 30308

Re: Plant Hammond Ash Pond 4 (AP-4)
1st Semi-Annual Statistical Analysis – September 2020 Sample Event

Dear Ms. Jurinko,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the statistical analysis of groundwater data for the 1st Semi-Annual sample event conducted in September 2020 for Georgia Power Company's Plant Hammond AP-4. 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 Hammond AP-4 in 2016, and at least 8 background samples have been collected at each of the groundwater monitoring wells analyzed in this report. The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient well:** HGWA-47, HGWA-48D, HGWA-111, HGWA-112, and HGWA-113
- **Downgradient wells:** HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, and HGWC-118

Note that well HGWC-102 was first sampled in October 2019 and currently has 8 samples. New upgradient wells HGWA-47 and HGWA-48D were first sampled in September 2020 and were the only two wells sampled in both November and December 2020. These wells currently have 3 samples and are in the process of having background samples collected.

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Andrew Collins, Project Manager of Groundwater Stats Consulting.

The CCR program consists of the following constituents listed below. The terms "constituent" and "parameter" are interchangeable.

- **Appendix III** (Detection Monitoring) **-** boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Note that when there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. A summary of well/constituent pairs with 100% nondetects follows this letter. Additionally, when Appendix IV constituents are not detected during a scheduled Scan event, no statistical analyses are required during the semi-annual sample event. During the annual Scan event conducted in August 2020, antimony, mercury, molybdenum, selenium, and thallium were not detected, and therefore, were not required to be sampled during the September 2020 event. These constituents were included in the time series and box plots, but no formal statistics were required.

For all constituents, a substitution of the most recent reporting limit is used for nondetect data. This generally gives the most conservative limit in each case. In the time series plots, a single reporting limit substitution is used across all wells for a given parameter since the wells are plotted as a group. In the case of lithium, the reporting limit of 0.03 mg/L was substituted across all wells which is the most recent reporting limit provided by the laboratory.

Time series plots for Appendix III and IV parameters at all wells are provided for the purpose of screening data at these wells (Figure A). Additionally, a separate section of box plots is included for all constituents at upgradient and downgradient wells (Figure B). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells. Values in background which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the graphs. A summary of flagged outliers follows this report (Figure C).

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.

Statistical Methods – Appendix III Parameters

Appendix III parameters are evaluated using interwell prediction limits combined with a 1-of-2 resample plan for all constituents: boron, calcium, chloride, fluoride, pH, sulfate, and TDS.

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are nondetects, a nonparametric test is utilized. While the false positive rate associated with the parametric limits is based on an annual 10% (5% per semi-annual event) as recommended by the EPA Unified Guidance (2009), the false positive rate associated with the nonparametric limits is dependent upon the available background sample size, number of future comparisons, and verification resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits.

- No statistical analyses are required on wells and analytes containing 100% nondetects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% nondetects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for nondetects is the most recent 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.

Note that values shown on data pages reflect raw data and any non-detects that have been substituted with one-half of the reporting limit will be shown as the original reporting limit.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the interwell case, prediction limits are updated with upgradient well data during each event after careful screening for any new outliers. In some cases, an earlier portion of data may require deselection prior to construction of limits to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs. When this step is required a summary of any adjusted records will be provided. No records were adjusted at this time.

Summary of Background Screening Conducted in April 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, a few outliers were identified. Often, 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 as all other values are similar to remaining measurements within a given well or neighboring wells, or were reported nondetects.

Additionally, when any values are flagged in the database as outliers, they are plotted in a disconnected and lighter symbol on the time series graph. The accompanying data pages display the flagged value in a lighter font as well. A substitution of the most recent reporting limit was applied when varying detection limits existed in data.

No obvious seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

While trends may be identified by visual inspection, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant decreasing trends are present, all available data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When any records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits.

The results of the trend analyses were included with the previous screening and showed a few statistically significant decreasing and increasing trends for the Appendix III parameters. Most trends noted were relatively low in magnitude when compared to average concentrations, and the background period is short; therefore, no adjustments were made to the data sets.

Appendix III – Determination of Spatial Variation

The Analysis of Variance (ANOVA) was used to statistically evaluate differences in average concentrations among upgradient wells, which assists in identifying the most appropriate statistical approach. Interwell tests, which compare downgradient well data to statistical limits constructed from pooled upgradient well data, are appropriate when average concentrations are similar across upgradient wells. Intrawell tests, which compare compliance data from a single well to screened historical data within the same well, are appropriate when upgradient wells exhibit spatial variation; when statistical limits constructed from upgradient wells would not be conservative from a regulatory perspective; and when downgradient water quality is unimpacted compared to upgradient water quality for the same parameter.

The ANOVA identified no variation among upgradient well data for boron or fluoride, making these constituents eligible for interwell analyses. Variation was noted for calcium, chloride, pH, sulfate and TDS. While data were further tested for intrawell eligibility during

the screening, interwell methods will be used for all Appendix III constituents in accordance with Georgia EPD requirements.

Statistical Evaluation of Appendix III Parameters – September 2020

All Appendix III parameters were analyzed using interwell prediction limits. Background (upgradient) well data were re-assessed for potential outliers during this analysis. Values in background which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the graphs. No new values were flagged and a summary of previously flagged outliers follows this report (Figure C).

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed using all historical upgradient well data through September 2020 except for upgradient wells HGWA-47 and HGWA-48D, which have samples through December 2020 (Figure D). Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well for the September 2020 sample event is compared to the background limit to determine whether there are statistically significant increases (SSIs).

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When a resample confirms the initial exceedance, a statistically significant increase is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result and, therefore, no exceedance is noted and no further action is necessary. If no resample is collected, the original result is considered a confirmed exceedance. Several prediction limit exceedances were noted for Appendix III parameters. A summary table of the interwell prediction limits follows this letter.

When prediction limit exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable (Figure E). Upgradient wells are included in the trend analyses for all parameters found to exceed their prediction limit in downgradient wells to identify whether similar patterns exist upgradient of the site. When trends are present in upgradient trends, it is an indication of natural variability in groundwater unrelated to practices at the site. Trend tests require a minimum of 6 samples; therefore, the new upgradient wells HGWA-47 and HGWA-48D were not included in this analysis. A summary of the trend test results follows this letter. Statistically significant trends were noted for the following well/constituent pairs:

Increasing:

- Boron: HGWC-107
- Calcium: HGWC-105

Decreasing:

- Sulfate: HGWA-113 (upgradient) and HGWC-105

Statistical Methods – Appendix IV Parameters

Appendix IV parameters are evaluated by statistically comparing the mean or median of each downgradient well/constituent pair against corresponding Groundwater Protection Standards (GWPS). The GWPS may be either regulatory (MCL or CCR rule-specified limits) or site-specific limits that are based on upgradient background groundwater quality. Site-specific background limits are determined using tolerance limits, and the comparison of downgradient means or medians to GWPS is performed using confidence intervals. The methods are described below.

Statistical Evaluation of Appendix IV Parameters – September 2020

For Appendix IV parameters, confidence intervals for each downgradient well/constituent pair were compared against corresponding Groundwater Protection Standards (GWPS). GWPS were developed as described below. Well/constituent pairs that have 100% nondetects do not require analysis. Data from all wells for Appendix IV parameters are reassessed for outliers during each analysis. No new values were flagged and a summary of previously flagged outliers follows this report (Figure C).

First, interwell tolerance limits were used to calculate site-specific background limits from all available pooled upgradient well data through September 2020 except for upgradient wells HGWA-47 and HGWA-48D, which have samples through December 2020 for Appendix IV constituents (Figure F). As mentioned above, a reporting limit of 0.03 mg/L was substituted across all wells for lithium. Parametric tolerance limits are used when data follow a normal or transformed-normal distribution. When data contained greater than 50% nondetects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The background limits were then used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia EPD Rule 391-3-4-.10(6)(a).

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

Following Georgia EPD Rule requirements and the Federal CCR requirements, Federal and State GWPS were established for statistical comparison of Appendix IV constituents for the September 2020 sample event (Figure G). Note that a GWPS is established for antimony, mercury, molybdenum, selenium, and thallium. However, since there were no recent detections of these parameters above the reporting limit, no statistical comparison with confidence intervals was required.

To complete the statistical comparison to GWPS, State confidence intervals were constructed for the Appendix IV constituents in accordance with the state requirements in each downgradient well (Figure H). The Sanitas software was used to calculate the tolerance limits and the confidence intervals. The confidence intervals were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a) for the State requirements. Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. A summary of the confidence intervals follows this letter. If there is an exceedance of the GWPS, a statistically significant level (SSL) exceedance is identified. No exceedances were noted for any well/constituent pairs.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for Hammond AP-4. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

Abdul Diane
Groundwater Analyst

Andrew Collins
Project Manager

100% Non-Detects

Analysis Run 12/15/2020 10:56 PM View: Appendix IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Arsenic (mg/L)
HGWC-103, HGWC-105, HGWC-107, HGWC-118

Beryllium (mg/L)
HGWC-102, HGWC-105, HGWC-107, HGWC-109, HGWC-118

Cadmium (mg/L)
HGWC-105, HGWC-109, HGWC-118

Cobalt (mg/L)
HGWC-107

Lithium (mg/L)
HGWC-101

Interwell Prediction Limits - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 2:50 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-101	0.05	n/a	9/24/2020	0.1	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-102	0.05	n/a	9/24/2020	2.9	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-103	0.05	n/a	9/24/2020	2.2	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-105	0.05	n/a	9/24/2020	1.2	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-107	0.05	n/a	9/24/2020	0.88	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-109	0.05	n/a	9/25/2020	0.28	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-117	0.05	n/a	9/25/2020	1.1	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-118	0.05	n/a	9/28/2020	0.65	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-102	73.3	n/a	9/24/2020	120	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-103	73.3	n/a	9/24/2020	91.3	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	73.3	n/a	9/24/2020	92.9	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	73.3	n/a	9/28/2020	88.9	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-102	5.7	n/a	9/24/2020	7.2	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-103	5.7	n/a	9/24/2020	6	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-117	5.7	n/a	9/25/2020	16.1	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	9/24/2020	97	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-102	14	n/a	9/24/2020	370	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	9/24/2020	293	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	9/24/2020	177	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-107	14	n/a	9/24/2020	126	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	9/25/2020	24.7	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-117	14	n/a	9/25/2020	146	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-118	14	n/a	9/28/2020	86	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-102	288.3	n/a	9/24/2020	696	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-103	288.3	n/a	9/24/2020	517	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	288.3	n/a	9/24/2020	411	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	288.3	n/a	9/25/2020	340	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-118	288.3	n/a	9/28/2020	332	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2

Interwell Prediction Limits - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 2:50 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	**HGWC-101**	**0.05**	**n/a**	**9/24/2020**	**0.1**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-102**	**0.05**	**n/a**	**9/24/2020**	**2.9**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-103**	**0.05**	**n/a**	**9/24/2020**	**2.2**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-105**	**0.05**	**n/a**	**9/24/2020**	**1.2**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-107**	**0.05**	**n/a**	**9/24/2020**	**0.88**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-109**	**0.05**	**n/a**	**9/25/2020**	**0.28**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-117**	**0.05**	**n/a**	**9/25/2020**	**1.1**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-118**	**0.05**	**n/a**	**9/28/2020**	**0.65**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	HGWC-101	73.3	n/a	9/24/2020	20.3	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	**HGWC-102**	**73.3**	**n/a**	**9/24/2020**	**120**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**HGWC-103**	**73.3**	**n/a**	**9/24/2020**	**91.3**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**HGWC-105**	**73.3**	**n/a**	**9/24/2020**	**92.9**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	HGWC-107	73.3	n/a	9/24/2020	55.4	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-109	73.3	n/a	9/25/2020	48.5	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-117	73.3	n/a	9/25/2020	72.8	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	**HGWC-118**	**73.3**	**n/a**	**9/28/2020**	**88.9**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	HGWC-101	5.7	n/a	9/24/2020	5.5	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	**HGWC-102**	**5.7**	**n/a**	**9/24/2020**	**7.2**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-103**	**5.7**	**n/a**	**9/24/2020**	**6**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	HGWC-105	5.7	n/a	9/24/2020	3.9	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-107	5.7	n/a	9/24/2020	3.5	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-109	5.7	n/a	9/25/2020	4.1	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	**HGWC-117**	**5.7**	**n/a**	**9/25/2020**	**16.1**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	HGWC-118	5.7	n/a	9/28/2020	4	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-101	0.181	n/a	9/24/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-102	0.181	n/a	9/24/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-103	0.181	n/a	9/24/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-105	0.181	n/a	9/24/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-107	0.181	n/a	9/24/2020	0.064J	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-109	0.181	n/a	9/25/2020	0.091J	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-117	0.181	n/a	9/25/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-118	0.181	n/a	9/28/2020	0.078J	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
pH (s.u.)	HGWC-101	7.54	5.47	9/24/2020	5.48	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-102	7.54	5.47	9/24/2020	5.82	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-103	7.54	5.47	9/24/2020	5.6	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-105	7.54	5.47	9/24/2020	6.63	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-107	7.54	5.47	9/24/2020	6.11	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-109	7.54	5.47	9/25/2020	6.79	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-117	7.54	5.47	9/25/2020	6.01	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-118	7.54	5.47	9/28/2020	7.03	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
Sulfate (mg/L)	**HGWC-101**	**14**	**n/a**	**9/24/2020**	**97**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-102**	**14**	**n/a**	**9/24/2020**	**370**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-103**	**14**	**n/a**	**9/24/2020**	**293**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-105**	**14**	**n/a**	**9/24/2020**	**177**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-107**	**14**	**n/a**	**9/24/2020**	**126**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-109**	**14**	**n/a**	**9/25/2020**	**24.7**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-117**	**14**	**n/a**	**9/25/2020**	**146**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-118**	**14**	**n/a**	**9/28/2020**	**86**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	HGWC-101	288.3	n/a	9/24/2020	170	No	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	**HGWC-102**	**288.3**	**n/a**	**9/24/2020**	**696**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-103**	**288.3**	**n/a**	**9/24/2020**	**517**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-105**	**288.3**	**n/a**	**9/24/2020**	**411**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	HGWC-107	288.3	n/a	9/24/2020	253	No	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-109	288.3	n/a	9/25/2020	188	No	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	**HGWC-117**	**288.3**	**n/a**	**9/25/2020**	**340**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-118**	**288.3**	**n/a**	**9/28/2020**	**332**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**

Trend Tests - Prediction Limit Exceedances - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 2:57 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**HGWC-107**	**0.04564**	**51**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	**HGWC-105**	**4.827**	**48**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**HGWA-113 (bg)**	**-1.886**	**-54**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**HGWC-105**	**-7.78**	**-45**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests - Prediction Limit Exceedances - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 2:57 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-111 (bg)	-0.001368	-12	-38	No	12	16.67	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-112 (bg)	-0.001715	-17	-38	No	12	25	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-113 (bg)	-0.001134	-9	-38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-101	0.002421	11	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-102	-0.517	-9	-21	No	8	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-103	0.00835	6	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-105	0.01191	9	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	**HGWC-107**	**0.04564**	**51**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	HGWC-109	-0.01598	-32	-43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-117	0.06364	30	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-118	-0.01732	-15	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-111 (bg)	2.597	6	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-112 (bg)	0.01309	4	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-113 (bg)	0.3543	33	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-102	-18.4	-7	-21	No	8	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-103	4.885	36	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	**HGWC-105**	**4.827**	**48**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	HGWC-118	1.704	24	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-111 (bg)	-0.09705	-7	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-112 (bg)	0.05844	15	38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-113 (bg)	-0.09485	-28	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-102	0.077	2	21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-103	0.2451	22	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-117	1.765	31	38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-111 (bg)	0	-8	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-112 (bg)	-0.0171	-22	-38	No	12	16.67	n/a	n/a	0.01	NP
Sulfate (mg/L)	**HGWA-113 (bg)**	**-1.886**	**-54**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	HGWC-101	-3.62	-28	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-102	97.63	6	21	No	8	12.5	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-103	3.256	6	43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**HGWC-105**	**-7.78**	**-45**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	HGWC-107	-0.4916	-17	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-109	-3.13	-30	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-117	-3.325	-12	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-118	-1.393	-16	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-111 (bg)	4.343	6	38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-112 (bg)	0	-1	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-113 (bg)	-3.149	-9	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-102	-68.87	-6	-21	No	8	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-103	-0.5883	-4	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-105	14.15	16	43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-117	-6.012	-10	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-118	-7.987	-19	-43	No	13	0	n/a	n/a	0.01	NP

Upper Tolerance Limit Summary Table

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 3:03 PM

Constituent	Upper Lim.	Lower Lim.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.003	n/a	n/a	36	n/a	n/a	94.44	n/a	n/a	0.1578	NP Inter(NDs)
Arsenic (mg/L)	0.005	n/a	n/a	45	n/a	n/a	95.56	n/a	n/a	0.09944	NP Inter(NDs)
Barium (mg/L)	0.091	n/a	n/a	45	n/a	n/a	0	n/a	n/a	0.09944	NP Inter(normality)
Beryllium (mg/L)	0.003	n/a	n/a	45	n/a	n/a	91.11	n/a	n/a	0.09944	NP Inter(NDs)
Cadmium (mg/L)	0.0025	n/a	n/a	45	n/a	n/a	100	n/a	n/a	0.09944	NP Inter(NDs)
Chromium (mg/L)	0.01	n/a	n/a	45	n/a	n/a	26.67	n/a	n/a	0.09944	NP Inter(normality)
Cobalt (mg/L)	0.005	n/a	n/a	45	n/a	n/a	84.44	n/a	n/a	0.09944	NP Inter(NDs)
Combined Radium 226 & 228 (pCi/L)	1.403	n/a	n/a	45	0.6915	0.34	0	None	No	0.05	Inter
Fluoride (mg/L)	0.1855	n/a	n/a	48	0.0799	0.05086	25	Kaplan-Meier	No	0.05	Inter
Lead (mg/L)	0.005	n/a	n/a	45	n/a	n/a	66.67	n/a	n/a	0.09944	NP Inter(NDs)
Lithium (mg/L)	0.03	n/a	n/a	45	n/a	n/a	48.89	n/a	n/a	0.09944	NP Inter(normality)
Mercury (mg/L)	0.0005	n/a	n/a	36	n/a	n/a	75	n/a	n/a	0.1578	NP Inter(NDs)
Molybdenum (mg/L)	0.01	n/a	n/a	36	n/a	n/a	88.89	n/a	n/a	0.1578	NP Inter(NDs)
Selenium (mg/L)	0.01	n/a	n/a	36	n/a	n/a	77.78	n/a	n/a	0.1578	NP Inter(NDs)
Thallium (mg/L)	0.001	n/a	n/a	36	n/a	n/a	100	n/a	n/a	0.1578	NP Inter(NDs)

PLANT HAMMOND AP-4 GWPS			
Constituent Name	**MCL**	**Background Limit**	**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	0.091	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)		0.005	0.005
Combined Radium, Total (pCi/L)	5	1.4	5
Fluoride, Total (mg/L)	4	0.19	4
Lead, Total (mg/L)		0.005	0.005
Lithium, Total (mg/L)		0.03	0.03
Mercury, Total (mg/L)	0.002	0.0005	0.002
Molybdenum, Total (mg/L)		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*

**GWPS = Groundwater Protection Standard*

State Confidence Interval - All Results (No Significant)

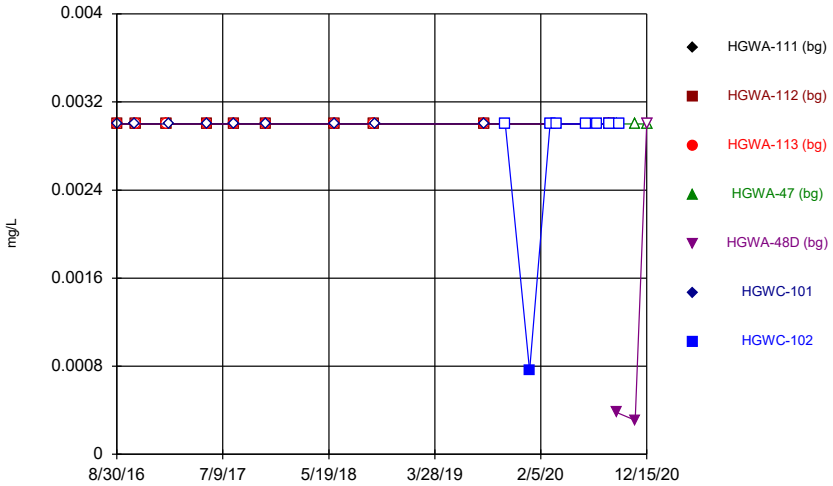
Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 12/22/2020, 6:01 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-101	0.005	0.00039	0.006	No	13	92.31	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-102	0.005	0.00036	0.006	No	8	50	No	0.004	NP (normality)
Arsenic (mg/L)	HGWC-109	0.002875	0.001355	0.006	No	13	0	No	0.01	Param.
Arsenic (mg/L)	HGWC-117	0.005	0.00037	0.006	No	13	92.31	No	0.01	NP (NDs)
Barium (mg/L)	HGWC-101	0.0473	0.04081	2	No	13	0	sqrt(x)	0.01	Param.
Barium (mg/L)	HGWC-102	0.03521	0.02579	2	No	8	0	No	0.01	Param.
Barium (mg/L)	HGWC-103	0.04112	0.03476	2	No	13	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-105	0.0745	0.066	2	No	13	0	No	0.01	NP (normality)
Barium (mg/L)	HGWC-107	0.03943	0.03716	2	No	13	0	x^3	0.01	Param.
Barium (mg/L)	HGWC-109	0.08915	0.08292	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-117	0.05061	0.04064	2	No	13	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-118	0.06333	0.05368	2	No	13	0	No	0.01	Param.
Beryllium (mg/L)	HGWC-101	0.003	0.000057	0.004	No	13	53.85	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-103	0.003	0.000088	0.004	No	13	84.62	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-117	0.003	0.000066	0.004	No	13	69.23	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-101	0.0003	0.0001	0.005	No	13	7.692	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-102	0.0006617	0.0001883	0.005	No	8	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-103	0.0008	0.0006585	0.005	No	13	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-107	0.00125	0.00009	0.005	No	13	46.15	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-117	0.0007915	0.0005593	0.005	No	13	0	No	0.01	Param.
Chromium (mg/L)	HGWC-101	0.01	0.00064	0.1	No	13	76.92	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-102	0.01	0.00051	0.1	No	8	75	No	0.004	NP (NDs)
Chromium (mg/L)	HGWC-103	0.01	0.00063	0.1	No	13	61.54	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-105	0.01	0.00064	0.1	No	13	76.92	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-107	0.01	0.00074	0.1	No	13	92.31	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-109	0.01	0.0014	0.1	No	13	84.62	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-117	0.01	0.00067	0.1	No	13	76.92	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-118	0.01	0.00081	0.1	No	13	69.23	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-101	0.002862	0.001953	0.005	No	13	7.692	No	0.01	Param.
Cobalt (mg/L)	HGWC-102	0.002645	0.0008778	0.005	No	8	0	sqrt(x)	0.01	Param.
Cobalt (mg/L)	HGWC-103	0.002358	0.001719	0.005	No	13	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-105	0.0025	0.00044	0.005	No	13	23.08	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-109	0.002099	0.001205	0.005	No	13	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-117	0.00923	0.004754	0.005	No	13	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-118	0.0025	0.0004	0.005	No	13	46.15	No	0.01	NP (normality)
Combined Radium 226 & 228 (pCi/L)	HGWC-101	0.9909	0.4373	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-102	1.418	0.6385	5	No	7	0	x^2	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-103	1.027	0.4663	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-105	0.9844	0.5634	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-107	1.212	0.5578	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-109	0.8708	0.4961	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-117	0.9457	0.4194	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-118	1.303	0.5322	5	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-101	0.1	0.05	4	No	14	85.71	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-102	0.22	0.1	4	No	8	87.5	No	0.004	NP (NDs)
Fluoride (mg/L)	HGWC-103	0.13	0.06	4	No	14	71.43	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-105	0.13	0.07	4	No	14	50	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-107	0.0949	0.03505	4	No	14	50	No	0.01	Param.
Fluoride (mg/L)	HGWC-109	0.126	0.07158	4	No	14	14.29	No	0.01	Param.
Fluoride (mg/L)	HGWC-117	0.11	0.09	4	No	14	50	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-118	0.3	0.072	4	No	15	0	No	0.01	NP (normality)
Lead (mg/L)	HGWC-101	0.005	0.0009	0.005	No	13	92.31	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-102	0.005	0.00011	0.005	No	8	87.5	No	0.004	NP (NDs)
Lead (mg/L)	HGWC-103	0.005	0.00018	0.005	No	13	69.23	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-105	0.005	0.000068	0.005	No	13	76.92	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-107	0.005	0.00021	0.005	No	13	76.92	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-109	0.005	0.000058	0.005	No	13	84.62	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-117	0.005	0.00016	0.005	No	13	69.23	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-118	0.005	0.00022	0.005	No	13	69.23	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-102	0.001312	0.0009955	0.03	No	8	0	x^2	0.01	Param.
Lithium (mg/L)	HGWC-103	0.03	0.0015	0.03	No	13	23.08	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-105	0.004188	0.003797	0.03	No	13	0	No	0.01	Param.
Lithium (mg/L)	HGWC-107	0.03	0.00092	0.03	No	13	61.54	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-109	0.03	0.0009	0.03	No	13	46.15	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-117	0.03	0.0012	0.03	No	13	23.08	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-118	0.03	0.0015	0.03	No	13	46.15	No	0.01	NP (normality)

FIGURE A.

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

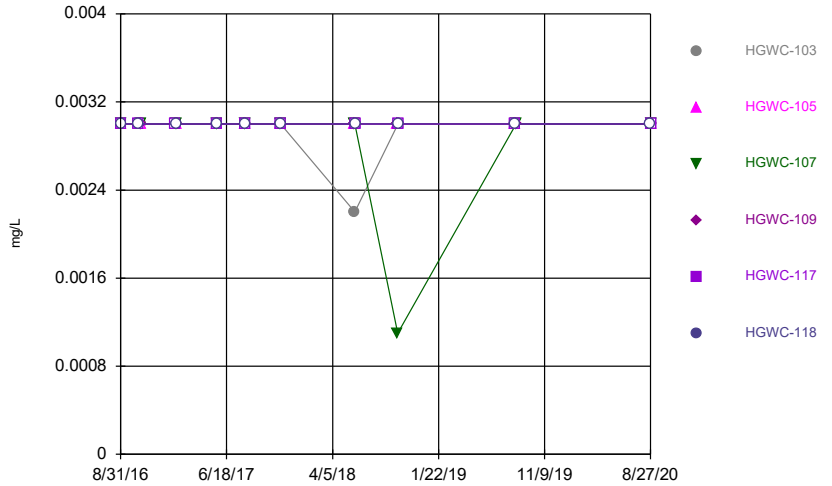
Time Series



Constituent: Antimony Analysis Run 2/17/2021 2:13 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony Analysis Run 2/17/2021 2:13 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
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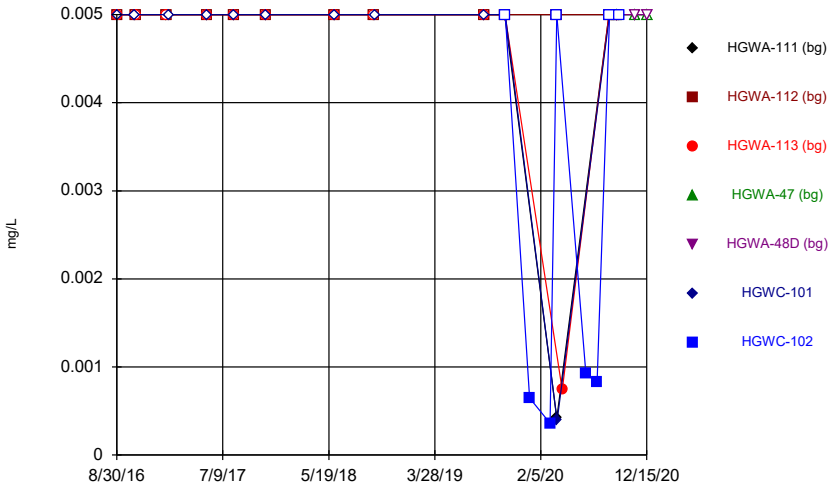
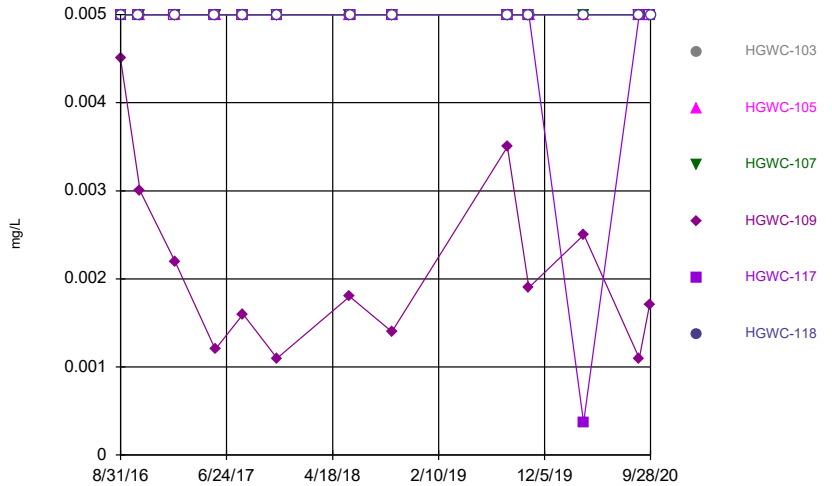


Constituent: Arsenic Analysis Run 2/17/2021 2:13 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

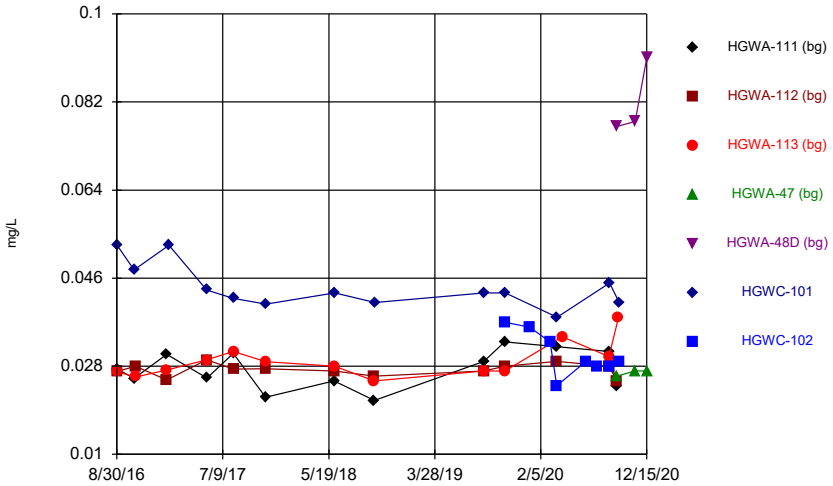
Time Series



Constituent: Arsenic Analysis Run 2/17/2021 2:13 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series

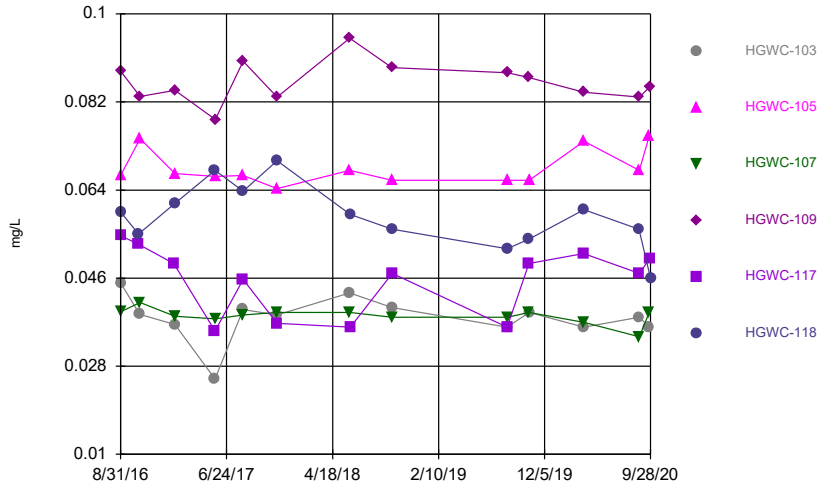


Constituent: Barium Analysis Run 2/17/2021 2:13 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series



Constituent: Barium Analysis Run 2/17/2021 2:13 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

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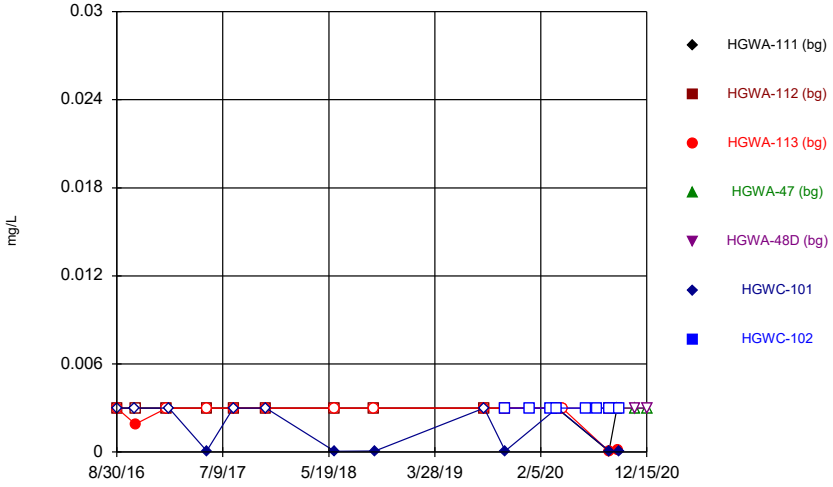
Time Series



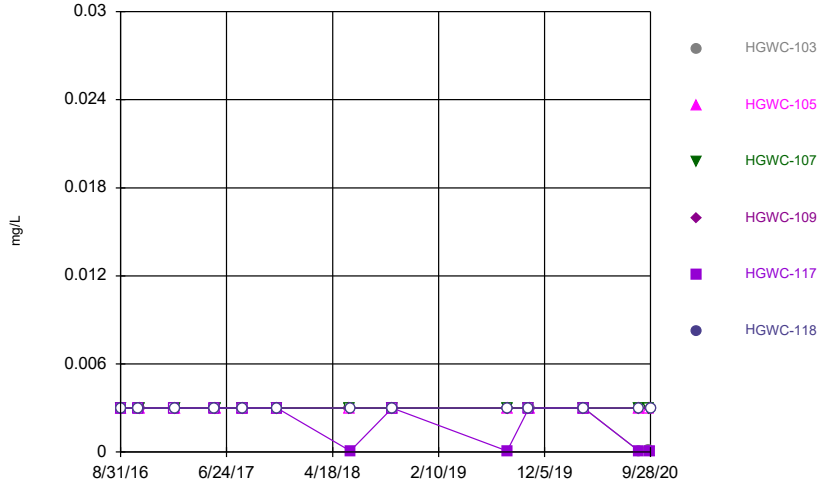
Constituent: Beryllium Analysis Run 2/17/2021 2:13 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series

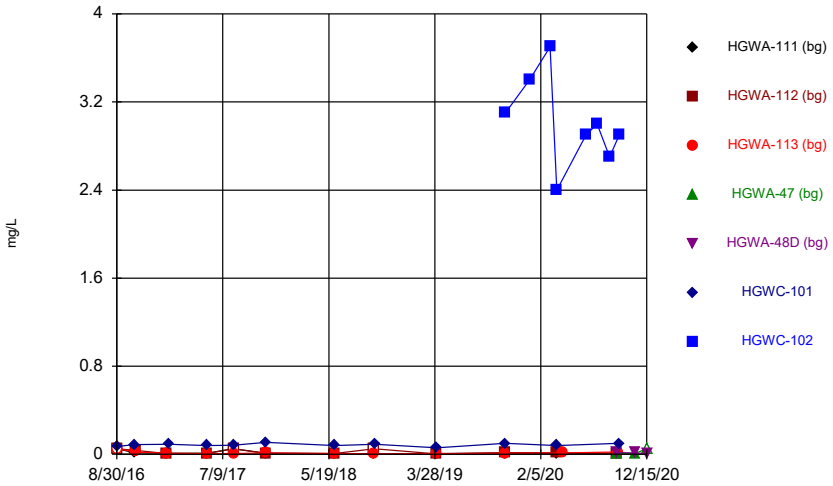


Constituent: Beryllium Analysis Run 2/17/2021 2:13 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

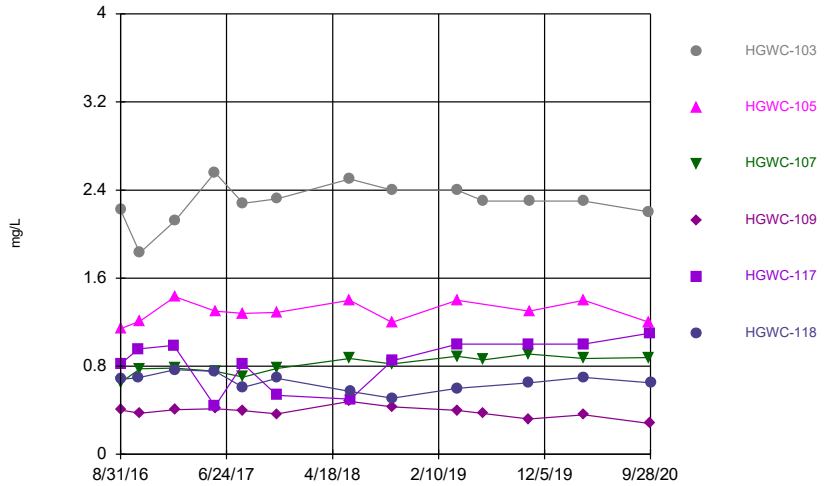
Time Series



Constituent: Boron Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series



Constituent: Boron Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

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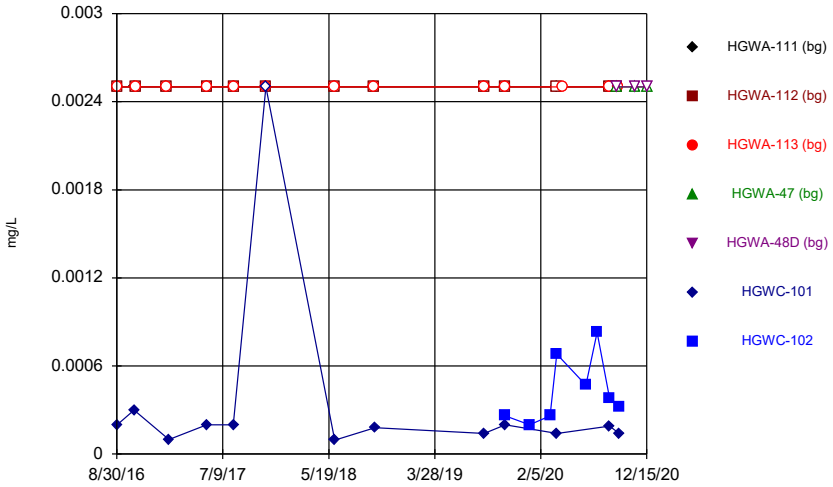
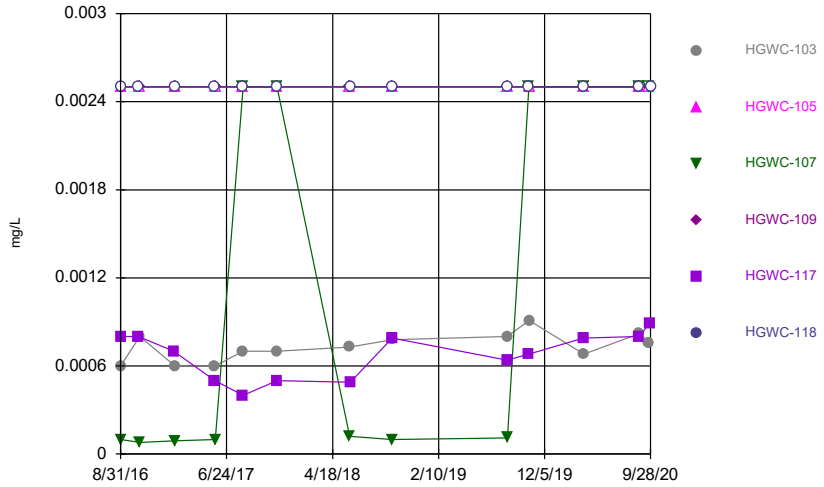


Constituent: Cadmium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

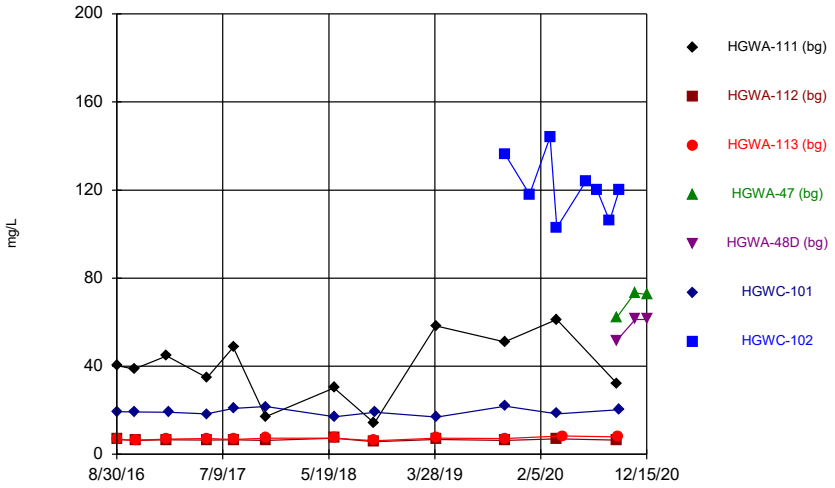
Time Series



Constituent: Cadmium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series

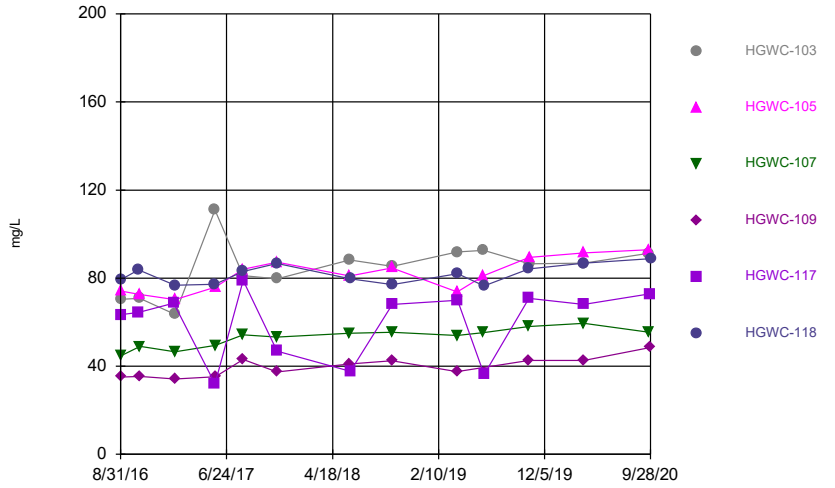


Constituent: Calcium Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series

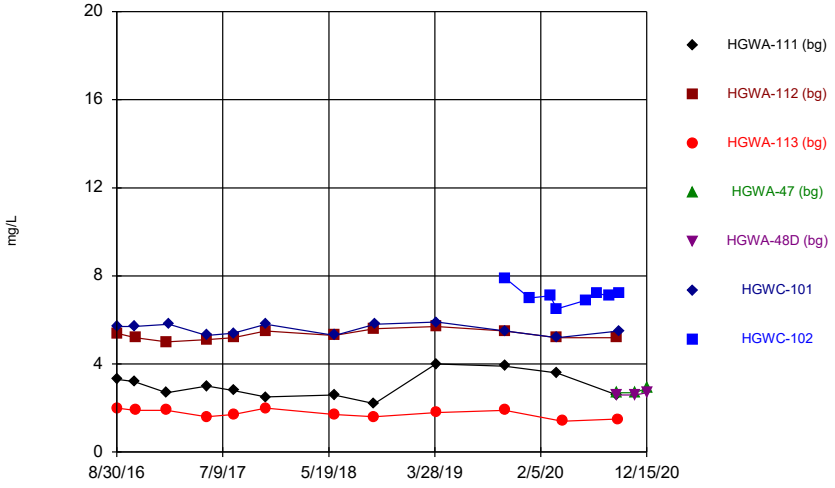


Constituent: Calcium Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series

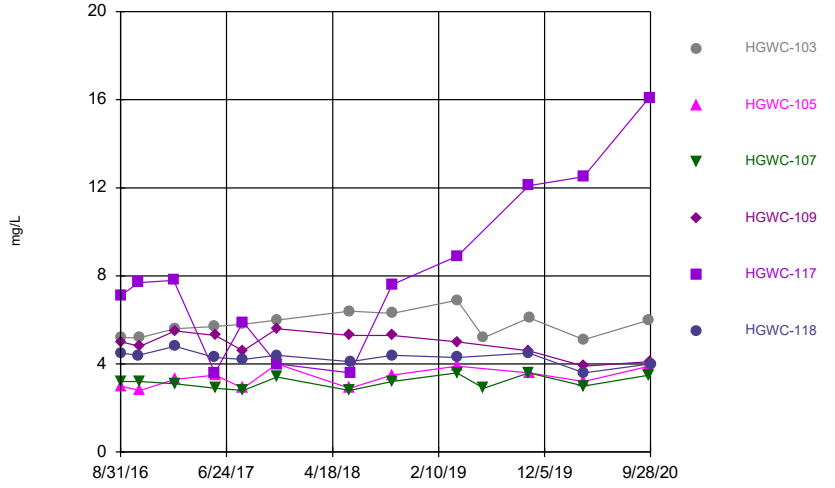


Constituent: Chloride Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series

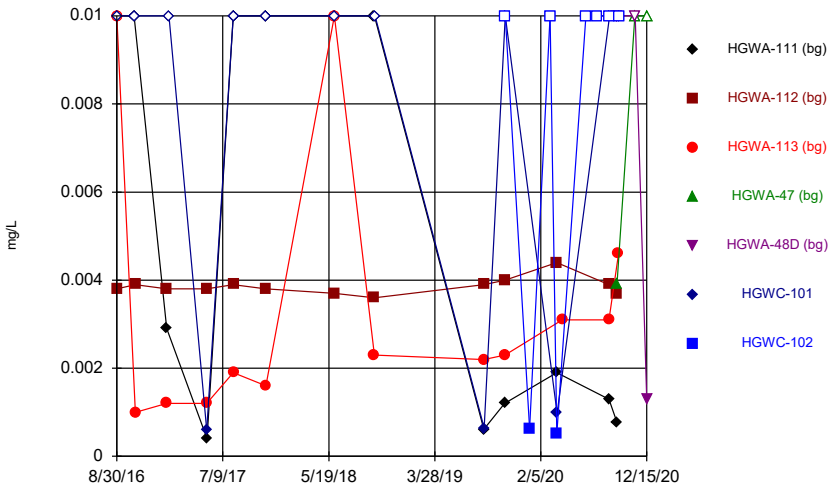


Constituent: Chloride Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

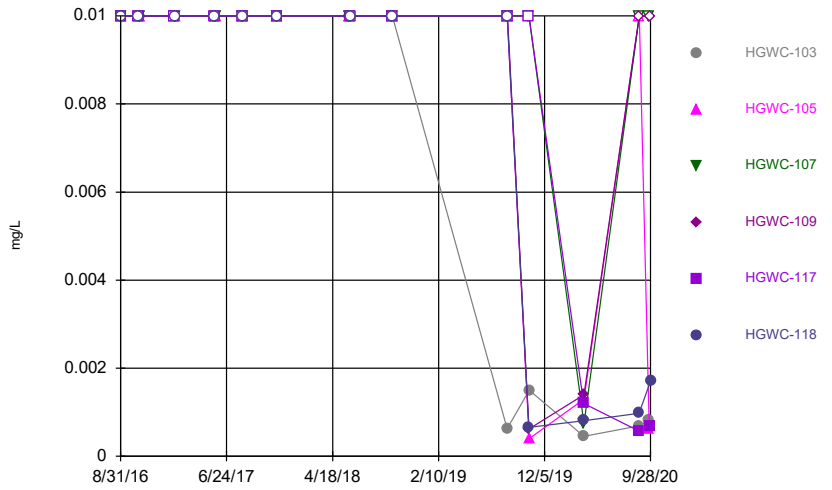
Time Series



Constituent: Chromium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
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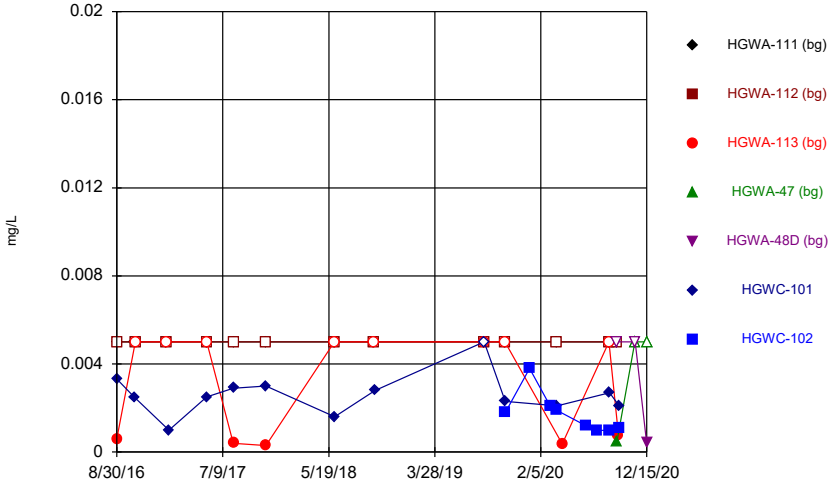
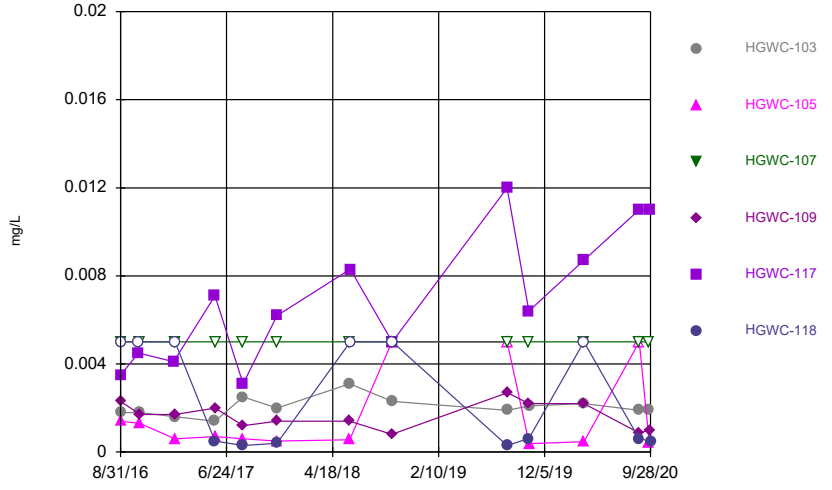


Constituent: Cobalt Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

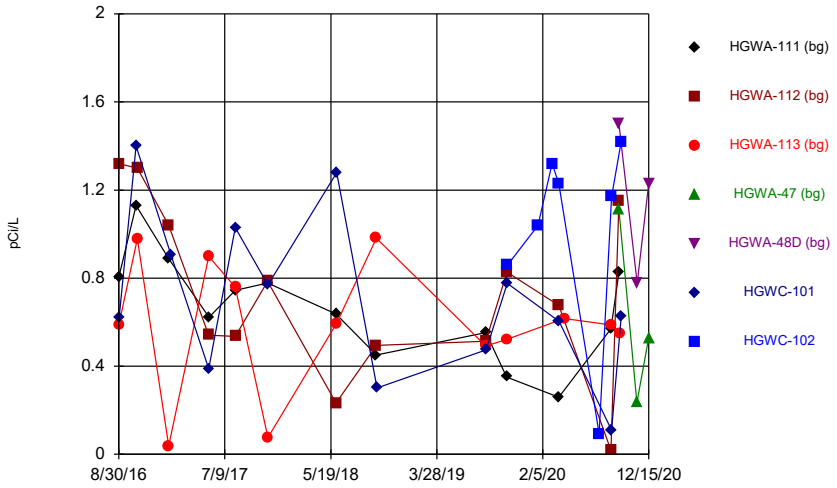
Time Series



Constituent: Cobalt Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series

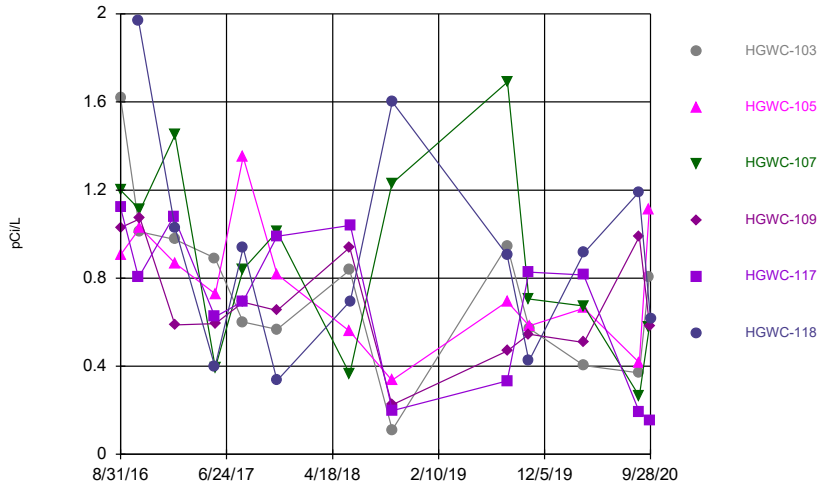


Constituent: Combined Radium 226 & 228 Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series

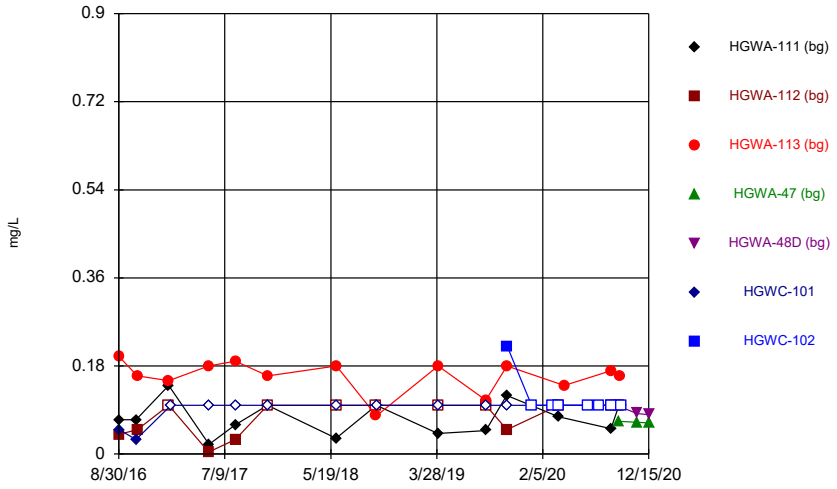


Constituent: Combined Radium 226 & 228 Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series

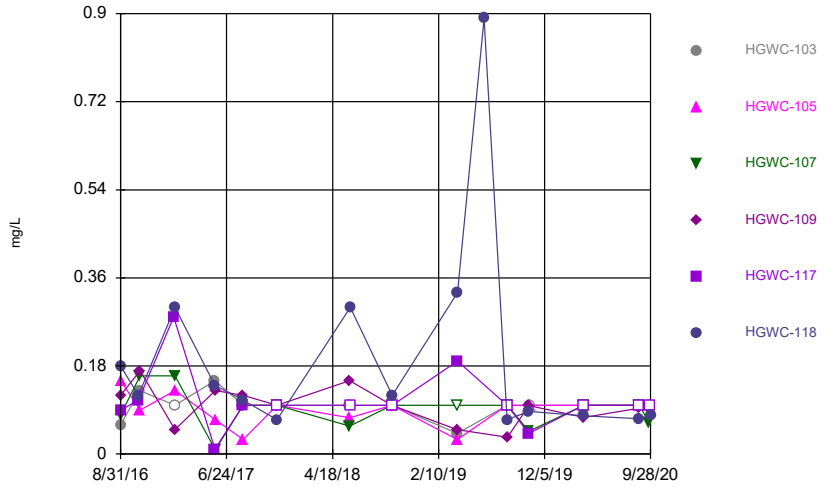


Constituent: Fluoride Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
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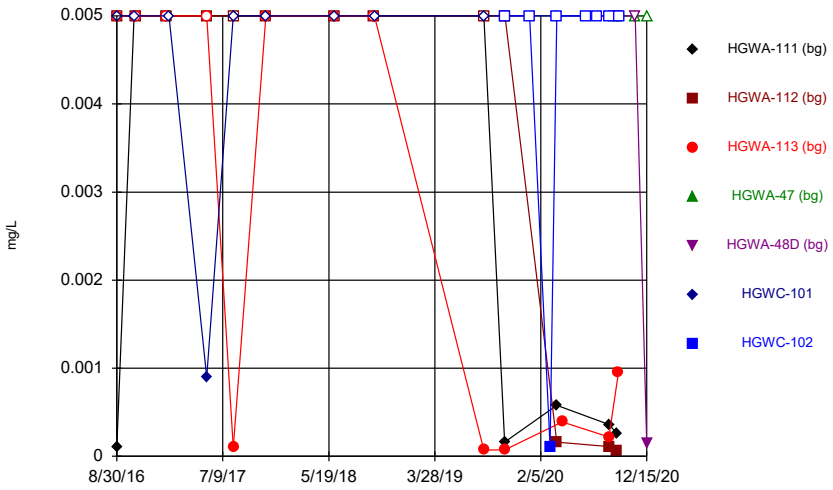
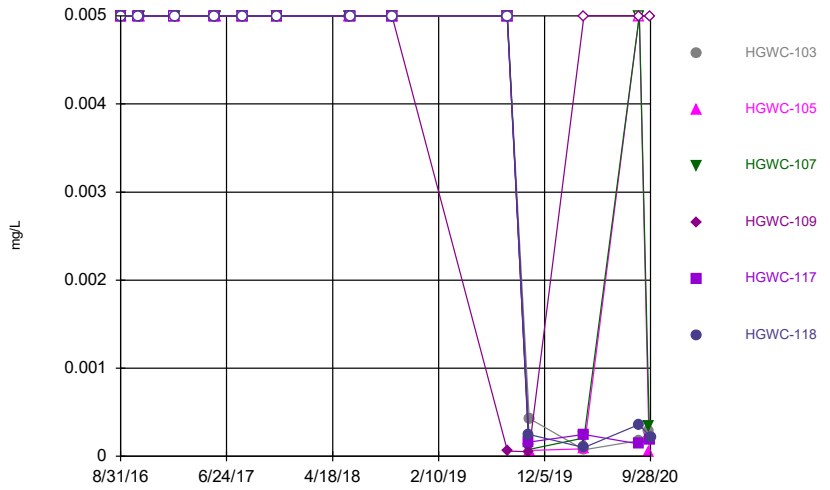
Time Series



Constituent: Lead Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

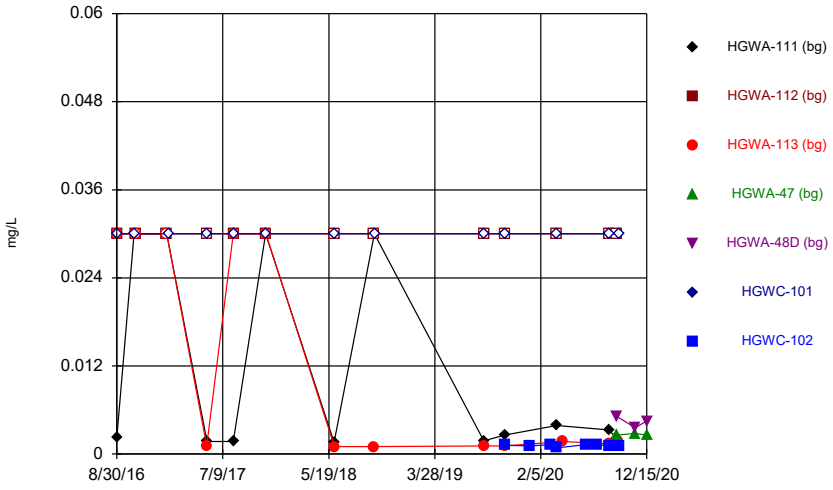
Time Series



Constituent: Lead Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

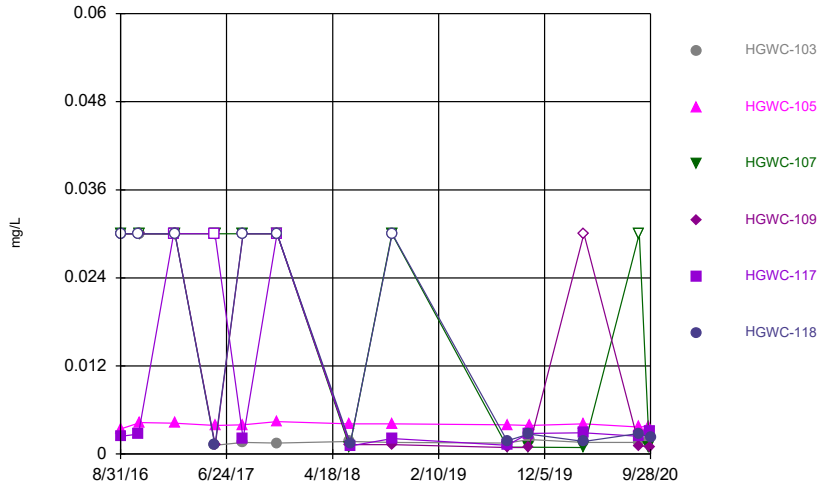
Time Series



Constituent: Lithium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

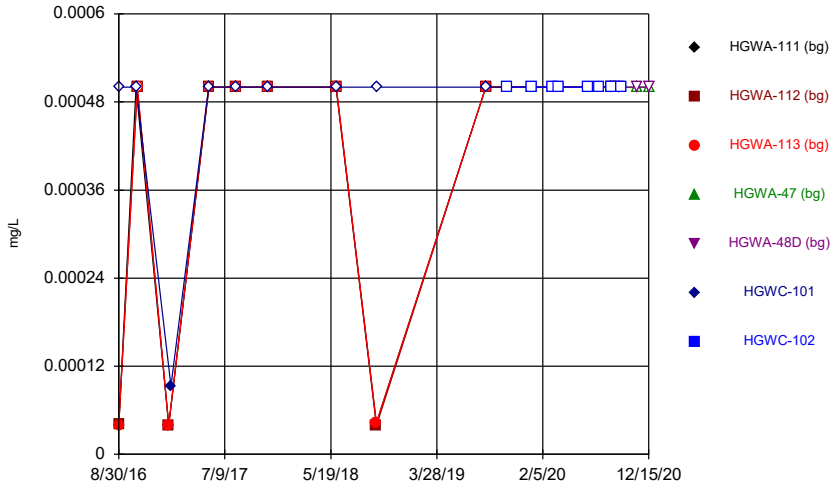
Time Series



Constituent: Lithium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

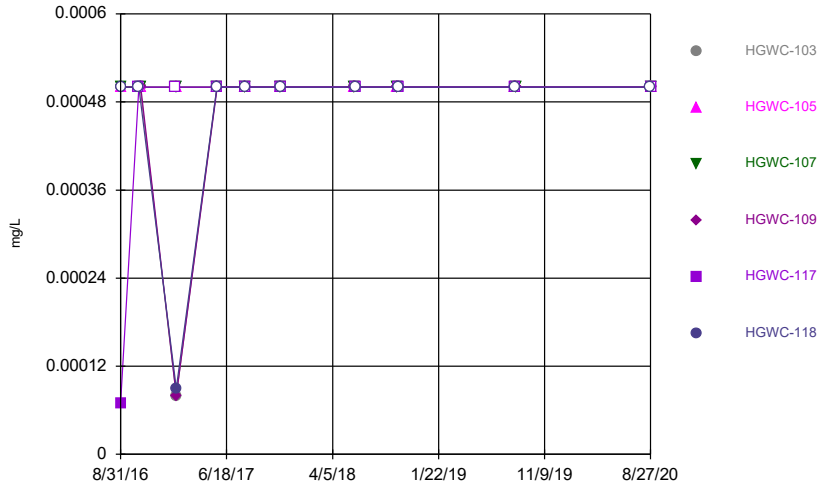
Time Series



Constituent: Mercury Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

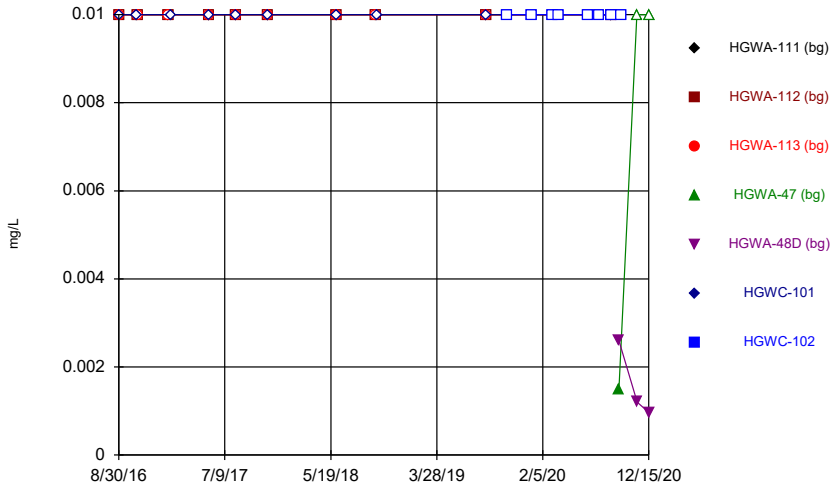
Time Series



Constituent: Mercury Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

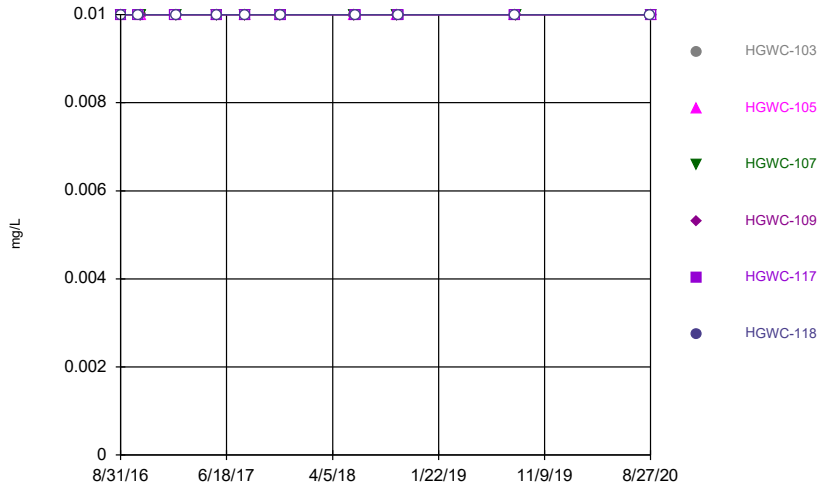
Time Series



Constituent: Molybdenum Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

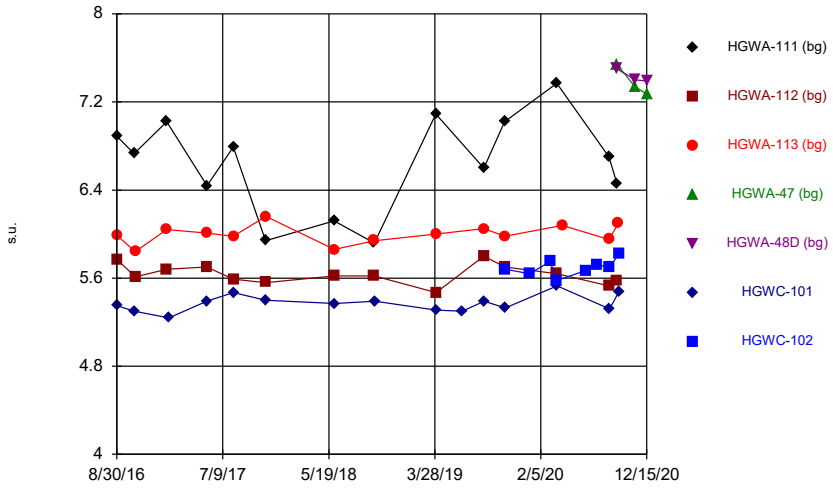
Time Series



Constituent: Molybdenum Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series

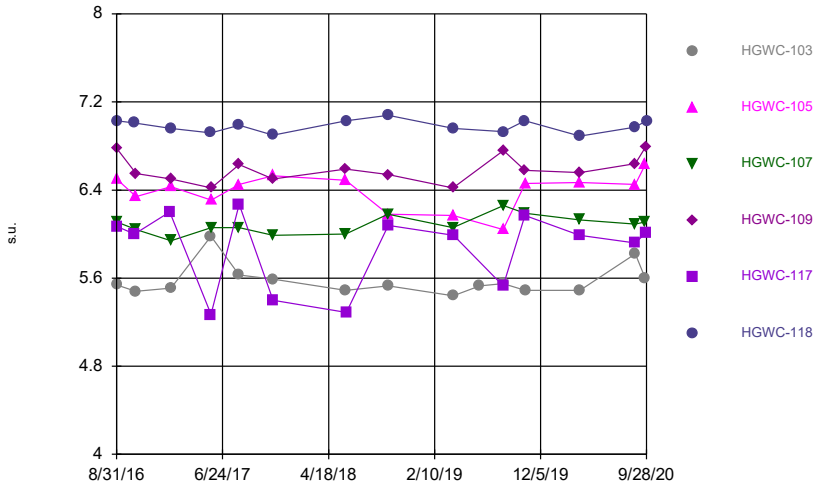


Constituent: pH Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series



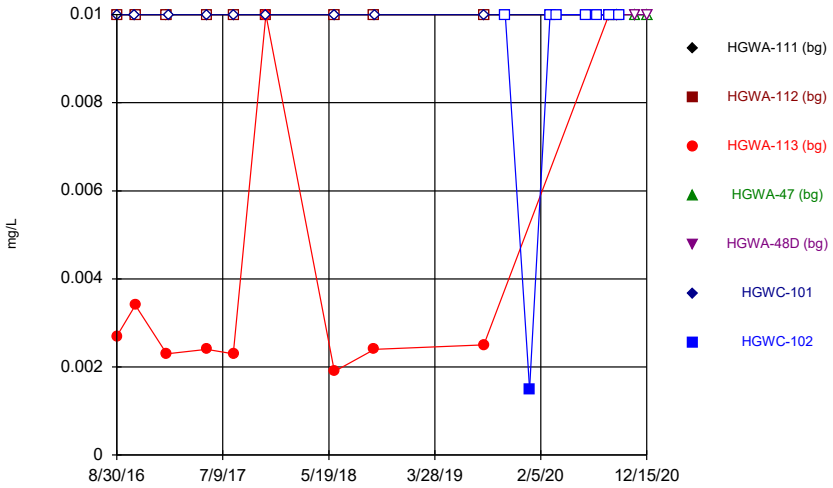
Constituent: pH Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series



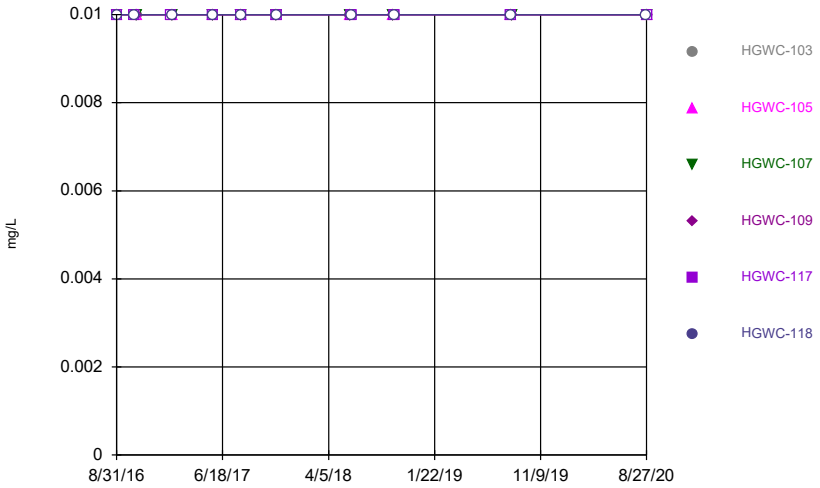
Constituent: Selenium Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series

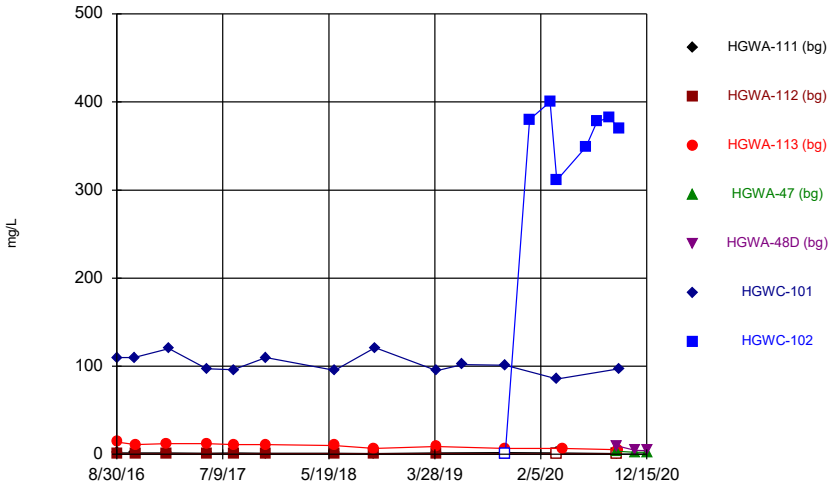


Constituent: Selenium Analysis Run 2/17/2021 2:14 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

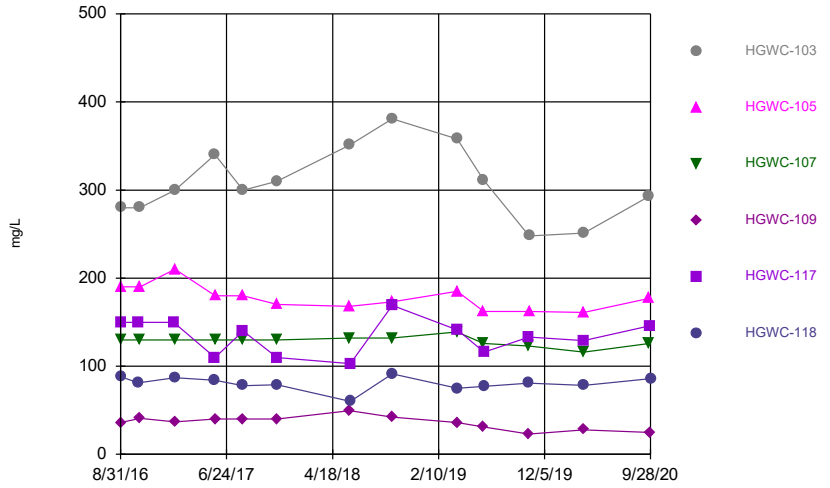
Time Series



Constituent: Sulfate Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

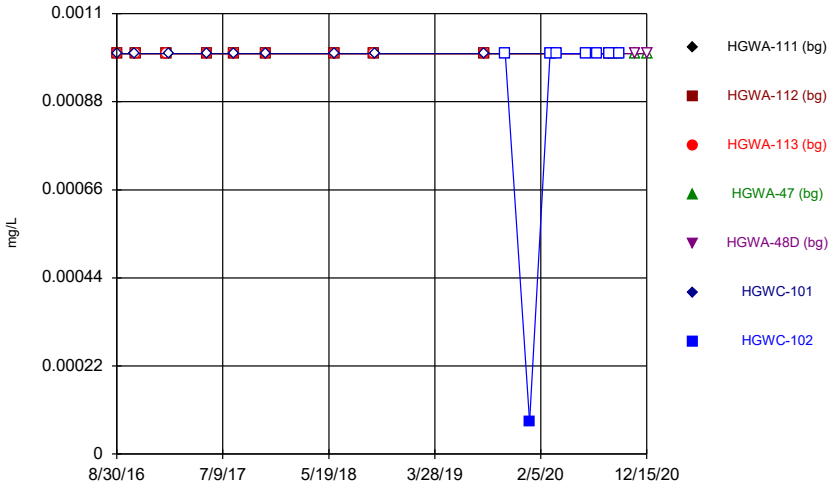
Time Series



Constituent: Sulfate Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

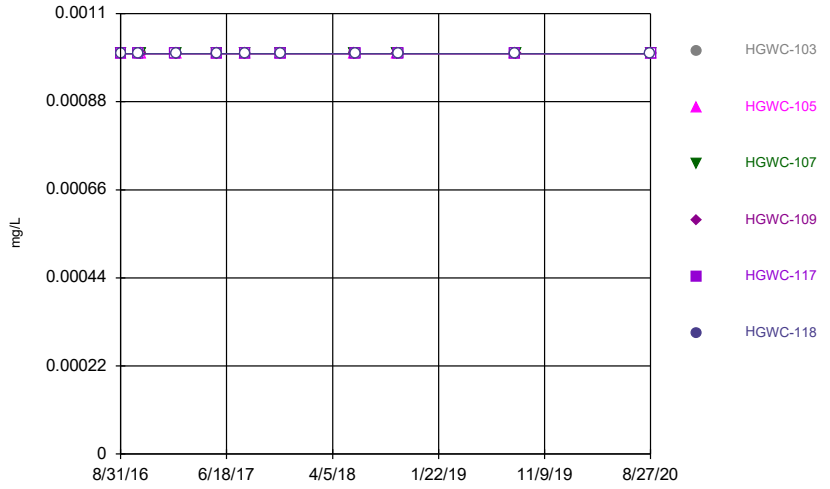
Time Series



Constituent: Thallium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

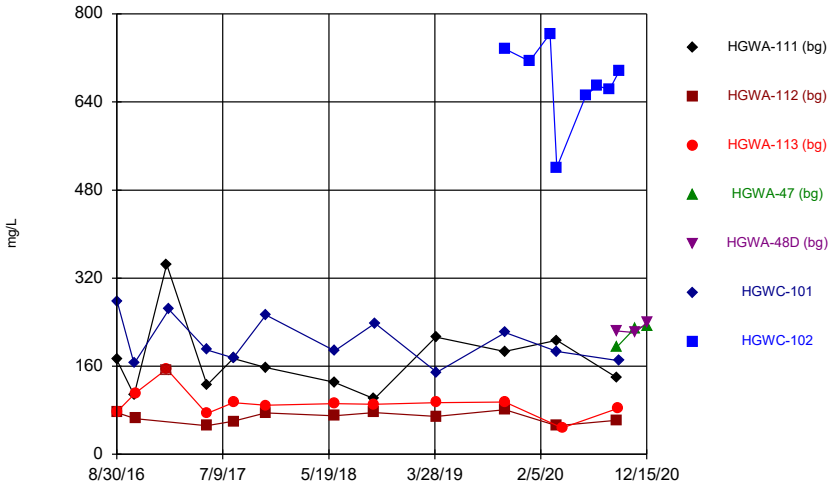
Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

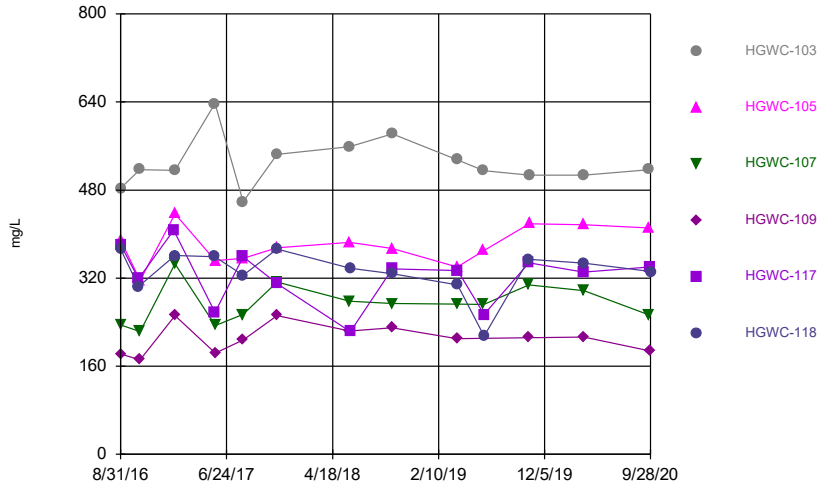
Time Series



Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Time Series



Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series

Constituent: Antimony (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.003	<0.003	<0.003				
8/31/2016						<0.003	
10/20/2016	<0.003					<0.003	
10/24/2016		<0.003	<0.003				
1/25/2017	<0.003	<0.003	<0.003				
1/31/2017						<0.003	
5/23/2017		<0.003	<0.003			<0.003	
5/24/2017	<0.003						
8/10/2017	<0.003	<0.003	<0.003			<0.003	
11/13/2017	<0.003	<0.003					
11/14/2017			<0.003			<0.003	
6/4/2018	<0.003	<0.003					
6/5/2018			<0.003				
6/6/2018						<0.003	
10/1/2018	<0.003	<0.003	<0.003				
10/3/2018						<0.003	
8/21/2019	<0.003	<0.003	<0.003				
8/22/2019						<0.003	
10/23/2019							<0.003
1/3/2020							0.00076 (J)
3/4/2020							<0.003
3/24/2020							<0.003
6/18/2020							<0.003
7/21/2020							<0.003
8/25/2020	<0.003	<0.003	<0.003				
8/27/2020						<0.003	<0.003
9/18/2020				<0.003	0.00038 (J)		
9/24/2020							<0.003
11/10/2020				<0.003			
11/11/2020					0.00031 (J)		
12/15/2020				<0.003	<0.003		

Time Series

Constituent: Antimony (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003
10/24/2016	<0.003					
10/25/2016		<0.003	<0.003	<0.003		
1/27/2017					<0.003	
1/31/2017	<0.003	<0.003	<0.003	<0.003		<0.003
5/23/2017	<0.003				<0.003	<0.003
5/24/2017		<0.003	<0.003	<0.003		
8/10/2017	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
11/14/2017	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
6/6/2018	0.0022 (J)	<0.003	<0.003	<0.003		
6/7/2018					<0.003	<0.003
10/2/2018		<0.003	0.0011 (J)	<0.003		
10/3/2018	<0.003				<0.003	<0.003
8/22/2019	<0.003	<0.003			<0.003	<0.003
8/23/2019			<0.003	<0.003		
8/26/2020						<0.003
8/27/2020	<0.003	<0.003	<0.003	<0.003	<0.003	

Time Series

Constituent: Arsenic (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.005	<0.005	<0.005				
8/31/2016						<0.005	
10/20/2016	<0.005					<0.005	
10/24/2016		<0.005	<0.005				
1/25/2017	<0.005	<0.005	<0.005				
1/31/2017						<0.005	
5/23/2017		<0.005	<0.005			<0.005	
5/24/2017	<0.005						
8/10/2017	<0.005	<0.005	<0.005			<0.005	
11/13/2017	<0.005	<0.005					
11/14/2017			<0.005			<0.005	
6/4/2018	<0.005	<0.005					
6/5/2018			<0.005				
6/6/2018						<0.005	
10/1/2018	<0.005	<0.005	<0.005				
10/3/2018						<0.005	
8/21/2019	<0.005	<0.005	<0.005				
8/22/2019						<0.005	
10/21/2019	<0.005						
10/22/2019		<0.005	<0.005				
10/23/2019						<0.005	<0.005
1/3/2020							0.00065 (J)
3/4/2020							0.00036 (J)
3/24/2020	0.00042 (J)	<0.005					<0.005
3/25/2020						0.00039 (J)	
4/9/2020			0.00074 (J)				
6/18/2020							0.00092 (J)
7/21/2020							0.00083 (J)
8/25/2020	<0.005	<0.005	<0.005				
8/27/2020						<0.005	<0.005
9/18/2020	<0.005	<0.005		<0.005	<0.005		
9/22/2020			<0.005				
9/24/2020						<0.005	<0.005
11/10/2020				<0.005			
11/11/2020					<0.005		
12/15/2020				<0.005	<0.005		

Time Series

Constituent: Arsenic (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.005	<0.005	<0.005	0.0045 (J)	<0.005	<0.005
10/20/2016					<0.005	<0.005
10/24/2016	<0.005					
10/25/2016		<0.005	<0.005	0.003 (J)		
1/27/2017					<0.005	
1/31/2017	<0.005	<0.005	<0.005	0.0022 (J)		<0.005
5/23/2017	<0.005				<0.005	<0.005
5/24/2017		<0.005	<0.005	0.0012 (J)		
8/10/2017	<0.005	<0.005	<0.005	0.0016 (J)	<0.005	<0.005
11/14/2017	<0.005	<0.005	<0.005	0.0011 (J)	<0.005	<0.005
6/6/2018	<0.005	<0.005	<0.005	0.0018 (J)		
6/7/2018					<0.005	<0.005
10/2/2018		<0.005	<0.005	0.0014 (J)		
10/3/2018	<0.005				<0.005	<0.005
8/22/2019	<0.005	<0.005			<0.005	<0.005
8/23/2019			<0.005	0.0035 (J)		
10/22/2019			<0.005	0.0019 (J)	<0.005	<0.005
10/23/2019	<0.005	<0.005				
3/24/2020					0.00037 (J)	
3/25/2020	<0.005	<0.005	<0.005	0.0025 (J)		<0.005
8/26/2020						<0.005
8/27/2020	<0.005	<0.005	<0.005	0.0011 (J)	<0.005	
9/24/2020	<0.005	<0.005	<0.005			
9/25/2020				0.0017 (J)	<0.005	
9/28/2020						<0.005

Time Series

Constituent: Barium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	0.0275	0.0269	0.0269				
8/31/2016						0.0527	
10/20/2016	0.0255					0.0477	
10/24/2016		0.028	0.0258				
1/25/2017	0.0304	0.0252	0.0272				
1/31/2017						0.0527	
5/23/2017		0.0293	0.0293			0.0436	
5/24/2017	0.0256						
8/10/2017	0.0306	0.0274	0.031			0.0419	
11/13/2017	0.0217	0.0275					
11/14/2017			0.0289			0.0407	
6/4/2018	0.025	0.027					
6/5/2018			0.028				
6/6/2018						0.043	
10/1/2018	0.021	0.026	0.025				
10/3/2018						0.041	
8/21/2019	0.029	0.027	0.027				
8/22/2019						0.043	
10/21/2019	0.033						
10/22/2019		0.028	0.027				
10/23/2019						0.043	0.037
1/3/2020							0.036
3/4/2020							0.033
3/24/2020	0.032	0.029					0.024
3/25/2020						0.038	
4/9/2020			0.034				
6/18/2020							0.029
7/21/2020							0.028
8/25/2020	0.031	0.028	0.03				
8/27/2020						0.045	0.028
9/18/2020	0.024	0.025		0.026	0.077		
9/22/2020			0.038				
9/24/2020						0.041	0.029
11/10/2020				0.027			
11/11/2020					0.078		
12/15/2020				0.027	0.091		

Time Series

Constituent: Barium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	0.045	0.067	0.0391	0.0883	0.0547	0.0595
10/20/2016					0.0529	0.055
10/24/2016	0.0386					
10/25/2016		0.0745	0.041	0.0831		
1/27/2017					0.049	
1/31/2017	0.0365	0.0674	0.0382	0.0844		0.0613
5/23/2017	0.0254				0.0352	0.068
5/24/2017		0.0668	0.0377	0.0784		
8/10/2017	0.0396	0.067	0.0385	0.0903	0.0457	0.0638
11/14/2017	0.0385	0.0643	0.039	0.083	0.0368	0.07
6/6/2018	0.043	0.068	0.039	0.095		
6/7/2018					0.036	0.059
10/2/2018		0.066	0.038	0.089		
10/3/2018	0.04				0.047	0.056
8/22/2019	0.036	0.066			0.036	0.052
8/23/2019			0.038	0.088		
10/22/2019			0.039	0.087	0.049	0.054
10/23/2019	0.039	0.066				
3/24/2020					0.051	
3/25/2020	0.036	0.074	0.037	0.084		0.06
8/26/2020						0.056
8/27/2020	0.038	0.068	0.034	0.083	0.047	
9/24/2020	0.036	0.075	0.039			
9/25/2020				0.085	0.05	
9/28/2020						0.046

Time Series

Constituent: Beryllium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.003	<0.003	<0.003				
8/31/2016						<0.003	
10/20/2016	<0.003					<0.003	
10/24/2016		<0.003	0.0019 (J)				
1/25/2017	<0.003	<0.003	<0.003				
1/31/2017						<0.003	
5/23/2017		<0.003	<0.003			7E-05 (J)	
5/24/2017	<0.003						
8/10/2017	<0.003	<0.003	<0.003			<0.003	
11/13/2017	<0.003	<0.003					
11/14/2017			<0.003			<0.003	
6/4/2018	<0.003	<0.003					
6/5/2018			<0.003				
6/6/2018						5.9E-05 (J)	
10/1/2018	<0.003	<0.003	<0.003				
10/3/2018						6.5E-05 (J)	
8/21/2019	<0.003	<0.003	<0.003				
8/22/2019						<0.003	
10/21/2019	<0.003						
10/22/2019		<0.003	<0.003				
10/23/2019						7.5E-05 (J)	<0.003
1/3/2020							<0.003
3/4/2020							<0.003
3/24/2020	<0.003	<0.003					<0.003
3/25/2020						<0.003	
4/9/2020			<0.003				
6/18/2020							<0.003
7/21/2020							<0.003
8/25/2020	4.7E-05 (J)	<0.003	4.6E-05 (J)				
8/27/2020						5.7E-05 (J)	<0.003
9/18/2020	<0.003	<0.003		<0.003	<0.003		
9/22/2020			9.9E-05 (J)				
9/24/2020						4.8E-05 (J)	<0.003
11/10/2020				<0.003			
11/11/2020					<0.003		
12/15/2020				<0.003	<0.003		

Time Series

Constituent: Beryllium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003
10/24/2016	<0.003					
10/25/2016		<0.003	<0.003	<0.003		
1/27/2017					<0.003	
1/31/2017	<0.003	<0.003	<0.003	<0.003		<0.003
5/23/2017	<0.003				<0.003	<0.003
5/24/2017		<0.003	<0.003	<0.003		
8/10/2017	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
11/14/2017	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
6/6/2018	<0.003	<0.003	<0.003	<0.003		
6/7/2018					6.8E-05 (J)	<0.003
10/2/2018		<0.003	<0.003	<0.003		
10/3/2018	<0.003				<0.003	<0.003
8/22/2019	<0.003	<0.003			7.9E-05 (J)	<0.003
8/23/2019			<0.003	<0.003		
10/22/2019			<0.003	<0.003	<0.003	<0.003
10/23/2019	<0.003	<0.003				
3/24/2020					<0.003	
3/25/2020	<0.003	<0.003	<0.003	<0.003		<0.003
8/26/2020						<0.003
8/27/2020	5E-05 (J)	<0.003	<0.003	<0.003	4.9E-05 (J)	
9/24/2020	8.8E-05 (J)	<0.003	<0.003			
9/25/2020				<0.003	6.6E-05 (J)	
9/28/2020						<0.003

Time Series

Constituent: Boron (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.1	<0.1	<0.1				
8/31/2016						0.0724 (J)	
10/20/2016	0.016 (J)					0.0877 (J)	
10/24/2016		0.0367 (J)	0.0226 (J)				
1/25/2017	0.0095 (J)	0.0075 (J)	0.009 (J)				
1/31/2017						0.0928	
5/23/2017		0.0073 (J)	0.0082 (J)			0.0795	
5/24/2017	0.0094 (J)						
8/10/2017	<0.1	<0.1	0.0061 (J)			0.0814	
11/13/2017	0.0103 (J)	0.0089 (J)					
11/14/2017			0.012 (J)			0.108	
6/4/2018	0.0065 (J)	0.007 (J)					
6/5/2018			0.0085 (J)				
6/6/2018						0.081	
10/1/2018	0.0054 (J)	<0.1	0.0042 (J)				
10/3/2018						0.092	
4/1/2019	0.0076 (J)						
4/2/2019		0.0043 (J)	0.0059 (J)				
4/4/2019						0.06 (X)	
10/21/2019	0.0097 (J)						
10/22/2019		0.016 (J)	0.01 (J)				
10/23/2019						0.1	3.1
1/3/2020							3.4
3/4/2020							3.7
3/24/2020	0.011 (J)	0.012 (J)					2.4
3/25/2020						0.08 (J)	
4/9/2020			0.012 (J)				
6/18/2020							2.9
7/21/2020							3
8/27/2020							2.7
9/18/2020	0.011 (J)	0.008 (J)		0.0082 (J)	0.015 (J)		
9/22/2020			0.021 (J)				
9/24/2020						0.1	2.9
11/10/2020				0.0064 (J)			
11/11/2020					0.014 (J)		
12/15/2020				<0.1	0.0083 (J)		

Time Series

Constituent: Boron (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	2.22	1.14	0.651	0.402	0.821	0.681
10/20/2016					0.956	0.697
10/24/2016	1.83					
10/25/2016		1.21	0.778	0.372		
1/27/2017					0.99	
1/31/2017	2.12	1.43	0.782	0.404		0.768
5/23/2017	2.56				0.438	0.754
5/24/2017		1.3	0.753	0.415		
8/10/2017	2.28	1.28	0.702	0.397	0.821	0.608
11/14/2017	2.32	1.29	0.78	0.366	0.536	0.691
6/6/2018	2.5	1.4	0.87	0.48		
6/7/2018					0.5	0.57
10/2/2018		1.2	0.82	0.43		
10/3/2018	2.4				0.85	0.51
4/3/2019			0.89	0.4		
4/4/2019	2.4	1.4 (X)				
4/5/2019					1 (X)	0.6 (X)
6/17/2019	2.3		0.86	0.37		
10/22/2019			0.91	0.32	1	0.65
10/23/2019	2.3	1.3				
3/24/2020					1	
3/25/2020	2.3	1.4	0.87	0.36		0.7
9/24/2020	2.2	1.2	0.88			
9/25/2020				0.28	1.1	
9/28/2020						0.65

Time Series

Constituent: Cadmium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.0025	<0.0025	<0.0025				
8/31/2016						0.0002 (J)	
10/20/2016	<0.0025					0.0003 (J)	
10/24/2016		<0.0025	<0.0025				
1/25/2017	<0.0025	<0.0025	<0.0025				
1/31/2017						0.0001 (J)	
5/23/2017		<0.0025	<0.0025			0.0002 (J)	
5/24/2017	<0.0025						
8/10/2017	<0.0025	<0.0025	<0.0025			0.0002 (J)	
11/13/2017	<0.0025	<0.0025					
11/14/2017			<0.0025			<0.0025	
6/4/2018	<0.0025	<0.0025					
6/5/2018			<0.0025				
6/6/2018						9.5E-05 (J)	
10/1/2018	<0.0025	<0.0025	<0.0025				
10/3/2018						0.00018 (J)	
8/21/2019	<0.0025	<0.0025	<0.0025				
8/22/2019						0.00014 (J)	
10/21/2019	<0.0025						
10/22/2019		<0.0025	<0.0025				
10/23/2019						0.0002 (J)	0.00026 (J)
1/3/2020							0.0002 (J)
3/4/2020							0.00026 (J)
3/24/2020	<0.0025	<0.0025					0.00068 (J)
3/25/2020						0.00014 (J)	
4/9/2020			<0.0025				
6/18/2020							0.00047 (J)
7/21/2020							0.00083 (J)
8/25/2020	<0.0025	<0.0025	<0.0025				
8/27/2020						0.00019 (J)	0.00038 (J)
9/18/2020	<0.0025	<0.0025		<0.0025	<0.0025		
9/22/2020			<0.0025				
9/24/2020						0.00014 (J)	0.00032 (J)
11/10/2020				<0.0025			
11/11/2020					<0.0025		
12/15/2020				<0.0025	<0.0025		

Time Series

Constituent: Cadmium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	0.0006 (J)	<0.0025	0.0001 (J)	<0.0025	0.0008 (J)	<0.0025
10/20/2016					0.0008 (J)	<0.0025
10/24/2016	0.0008 (J)					
10/25/2016		<0.0025	8E-05 (J)	<0.0025		
1/27/2017					0.0007 (J)	
1/31/2017	0.0006 (J)	<0.0025	9E-05 (J)	<0.0025		<0.0025
5/23/2017	0.0006 (J)				0.0005 (J)	<0.0025
5/24/2017		<0.0025	0.0001 (J)	<0.0025		
8/10/2017	0.0007 (J)	<0.0025	<0.0025	<0.0025	0.0004 (J)	<0.0025
11/14/2017	0.0007 (J)	<0.0025	<0.0025	<0.0025	0.0005 (J)	<0.0025
6/6/2018	0.00073 (J)	<0.0025	0.00012 (J)	<0.0025		
6/7/2018					0.00049 (J)	<0.0025
10/2/2018		<0.0025	0.0001 (J)	<0.0025		
10/3/2018	0.00078 (J)				0.00079 (J)	<0.0025
8/22/2019	0.0008 (J)	<0.0025			0.00064 (J)	<0.0025
8/23/2019			0.00011 (J)	<0.0025		
10/22/2019			<0.0025	<0.0025	0.00068 (J)	<0.0025
10/23/2019	0.00091 (J)	<0.0025				
3/24/2020					0.00079 (J)	
3/25/2020	0.00068 (J)	<0.0025	<0.0025	<0.0025		<0.0025
8/26/2020						<0.0025
8/27/2020	0.00082 (J)	<0.0025	<0.0025	<0.0025	0.0008 (J)	
9/24/2020	0.00076 (J)	<0.0025	<0.0025			
9/25/2020				<0.0025	0.00089 (J)	
9/28/2020						<0.0025

Time Series

Constituent: Calcium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	40.3	6.69	6.72				
8/31/2016						19.4	
10/20/2016	38.7					19.3	
10/24/2016		6.25	6.4				
1/25/2017	44.6	6.58	6.87				
1/31/2017						19.1	
5/23/2017		6.4	7.13			18.3	
5/24/2017	34.8						
8/10/2017	48.6	6.54	6.71			20.9	
11/13/2017	17.1	6.26					
11/14/2017			7.4			21.7	
6/4/2018	30.1	7.4					
6/5/2018			7.4				
6/6/2018						17	
10/1/2018	14.2 (J)	5.8	6.2				
10/3/2018						19.1 (J)	
4/1/2019	58.4						
4/2/2019		6.7	7.4				
4/4/2019						16.9	
10/21/2019	51						
10/22/2019		6.3	7.2				
10/23/2019						21.9	136
1/3/2020							118
3/4/2020							144
3/24/2020	61.2	7					103
3/25/2020						18.4	
4/9/2020			8.3				
6/18/2020							124
7/21/2020							120
8/27/2020							106
9/18/2020	32.2	6.5		62.2	51.8		
9/22/2020			7.9				
9/24/2020						20.3	120
11/10/2020				73.3			
11/11/2020					61.3		
12/15/2020				72.5	61.3		

Time Series

Constituent: Calcium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	70.4	74.2	44.7	35.1	63.4	79.3
10/20/2016					64.4	83.7
10/24/2016	70.9					
10/25/2016		72.5	49	35.4		
1/27/2017					68.6	
1/31/2017	63.6	70.3	46.6	34.2		76.8
5/23/2017	111				32	77.2
5/24/2017		75.9	49.5	35.3		
8/10/2017	81.2	84	54.2	43.1	78.9	83.1
11/14/2017	79.7	87.2	53.2	37.4	46.9	86.7
6/6/2018	88.3	81	55	41.1		
6/7/2018					37.7	79.7
10/2/2018		84.7	55.4	42.5		
10/3/2018	85.3				68	77.1
4/3/2019			54	37.5		
4/4/2019	91.9	73.8				
4/5/2019					70	82
6/17/2019	92.6	81.2	55.3			
6/18/2019					36.3	76.5
10/22/2019			58.1	42.6	70.9	84.2
10/23/2019	86.5	89.4				
3/24/2020					68	
3/25/2020	86.8	91.4	59.5	42.6		86.8
9/24/2020	91.3	92.9	55.4			
9/25/2020				48.5	72.8	
9/28/2020						88.9

Time Series

Constituent: Chloride (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	3.3	5.4	2				
8/31/2016						5.7	
10/20/2016	3.2					5.7	
10/24/2016		5.2	1.9				
1/25/2017	2.7	5	1.9				
1/31/2017						5.8	
5/23/2017		5.1	1.6			5.3	
5/24/2017	3						
8/10/2017	2.8	5.2	1.7			5.4	
11/13/2017	2.5	5.5					
11/14/2017			2			5.8	
6/4/2018	2.6	5.3					
6/5/2018			1.7				
6/6/2018						5.3	
10/1/2018	2.2	5.6	1.6				
10/3/2018						5.8	
4/1/2019	4						
4/2/2019		5.7	1.8				
4/4/2019						5.9	
10/21/2019	3.9						
10/22/2019		5.5	1.9				
10/23/2019						5.5	7.9
1/3/2020							7
3/4/2020							7.1
3/24/2020	3.6	5.2					6.5
3/25/2020						5.2	
4/9/2020			1.4				
6/18/2020							6.9
7/21/2020							7.2
8/27/2020							7.1
9/18/2020	2.6	5.2		2.7	2.6		
9/22/2020			1.5				
9/24/2020						5.5	7.2
11/10/2020				2.7			
11/11/2020					2.6		
12/15/2020				2.9	2.7		

Time Series

Constituent: Chloride (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	5.2	3	3.2	5	7.1	4.5
10/20/2016					7.7	4.4
10/24/2016	5.2					
10/25/2016		2.8	3.2	4.8		
1/27/2017					7.8	
1/31/2017	5.6	3.3	3.1	5.5		4.8
5/23/2017	5.7				3.6	4.3
5/24/2017		3.5	2.9	5.3		
8/10/2017	5.8	2.9	2.8	4.6	5.9	4.2
11/14/2017	6	4	3.4	5.6	4	4.4
6/6/2018	6.4	2.9	2.8	5.3		
6/7/2018					3.6	4.1
10/2/2018		3.5	3.2	5.3		
10/3/2018	6.3				7.6	4.4
4/3/2019			3.6	5		
4/4/2019	6.9	3.9				
4/5/2019					8.9	4.3
6/17/2019	5.2		2.9			
10/22/2019			3.6	4.6	12.1	4.5
10/23/2019	6.1	3.6				
3/24/2020					12.5	
3/25/2020	5.1	3.2	3	3.9		3.6
9/24/2020	6	3.9	3.5			
9/25/2020				4.1	16.1	
9/28/2020						4

Time Series

Constituent: Chromium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.01	0.0038 (J)	<0.01				
8/31/2016						<0.01	
10/20/2016	<0.01					<0.01	
10/24/2016		0.0039 (J)	0.001 (J)				
1/25/2017	0.0029 (J)	0.0038 (J)	0.0012 (J)				
1/31/2017						<0.01	
5/23/2017		0.0038 (J)	0.0012 (J)			0.0006 (J)	
5/24/2017	0.0004 (J)						
8/10/2017	<0.01	0.0039 (J)	0.0019 (J)			<0.01	
11/13/2017	<0.01	0.0038 (J)					
11/14/2017			0.0016 (J)			<0.01	
6/4/2018	<0.01	0.0037 (J)					
6/5/2018			<0.01				
6/6/2018						<0.01	
10/1/2018	<0.01	0.0036 (J)	0.0023 (J)				
10/3/2018						<0.01	
8/21/2019	0.00061 (J)	0.0039 (J)	0.0022 (J)				
8/22/2019						0.00064 (J)	
10/21/2019	0.0012 (J)						
10/22/2019		0.004 (J)	0.0023 (J)				
10/23/2019						<0.01	<0.01
1/3/2020							0.00063 (J)
3/4/2020							<0.01
3/24/2020	0.0019 (J)	0.0044 (J)					0.00051 (J)
3/25/2020						0.00098 (J)	
4/9/2020			0.0031 (J)				
6/18/2020							<0.01
7/21/2020							<0.01
8/25/2020	0.0013 (J)	0.0039 (J)	0.0031 (J)				
8/27/2020						<0.01	<0.01
9/18/2020	0.00077 (J)	0.0037 (J)		0.0039 (J)	<0.01		
9/22/2020			0.0046 (J)				
9/24/2020						<0.01	<0.01
11/10/2020				<0.01			
11/11/2020					<0.01		
12/15/2020				<0.01	0.0013 (J)		

Time Series

Constituent: Chromium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01
10/24/2016	<0.01					
10/25/2016		<0.01	<0.01	<0.01		
1/27/2017					<0.01	
1/31/2017	<0.01	<0.01	<0.01	<0.01		<0.01
5/23/2017	<0.01				<0.01	<0.01
5/24/2017		<0.01	<0.01	<0.01		
8/10/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
11/14/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
6/6/2018	<0.01	<0.01	<0.01	<0.01		
6/7/2018					<0.01	<0.01
10/2/2018		<0.01	<0.01	<0.01		
10/3/2018	<0.01				<0.01	<0.01
8/22/2019	0.00063 (J)	<0.01			<0.01	<0.01
8/23/2019			<0.01	<0.01		
10/22/2019			<0.01	0.00062 (J)	<0.01	0.00066 (J)
10/23/2019	0.0015 (J)	0.0004 (J)				
3/24/2020					0.0012 (J)	
3/25/2020	0.00045 (J)	0.0013 (J)	0.00074 (J)	0.0014 (J)		0.00081 (J)
8/26/2020						0.00098 (J)
8/27/2020	0.00069 (J)	<0.01	<0.01	<0.01	0.00057 (J)	
9/24/2020	0.00081 (J)	0.00064 (J)	<0.01			
9/25/2020				<0.01	0.00067 (J)	
9/28/2020						0.0017 (J)

Time Series

Constituent: Cobalt (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.005	<0.005	0.0006 (J)				
8/31/2016						0.0033 (J)	
10/20/2016	<0.005					0.0025 (J)	
10/24/2016		<0.005	<0.005				
1/25/2017	<0.005	<0.005	<0.005				
1/31/2017						0.001 (J)	
5/23/2017		<0.005	<0.005			0.0025 (J)	
5/24/2017	<0.005						
8/10/2017	<0.005	<0.005	0.0004 (J)			0.0029 (J)	
11/13/2017	<0.005	<0.005					
11/14/2017			0.0003 (J)			0.003 (J)	
6/4/2018	<0.005	<0.005					
6/5/2018			<0.005				
6/6/2018						0.0016 (J)	
10/1/2018	<0.005	<0.005	<0.005				
10/3/2018						0.0028 (J)	
8/21/2019	<0.005	<0.005	<0.005				
8/22/2019						<0.005	
10/21/2019	<0.005						
10/22/2019		<0.005	<0.005				
10/23/2019						0.0023 (J)	0.0018 (J)
1/3/2020							0.0038 (J)
3/4/2020							0.0021 (J)
3/24/2020	<0.005	<0.005					0.0019 (J)
3/25/2020						0.0021 (J)	
4/9/2020			0.00037 (J)				
6/18/2020							0.0012 (J)
7/21/2020							0.00098 (J)
8/25/2020	<0.005	<0.005	<0.005				
8/27/2020						0.0027 (J)	0.001 (J)
9/18/2020	<0.005	<0.005		0.00049 (J)	<0.005		
9/22/2020			0.00074 (J)				
9/24/2020						0.0021 (J)	0.0011 (J)
11/10/2020				<0.005			
11/11/2020					<0.005		
12/15/2020				<0.005	0.00039 (J)		

Time Series

Constituent: Cobalt (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	0.0018 (J)	0.0014 (J)	<0.005	0.0023 (J)	0.0035 (J)	<0.005
10/20/2016					0.0045 (J)	<0.005
10/24/2016	0.0018 (J)					
10/25/2016		0.0013 (J)	<0.005	0.0017 (J)		
1/27/2017					0.0041 (J)	
1/31/2017	0.0016 (J)	0.0006 (J)	<0.005	0.0017 (J)		<0.005
5/23/2017	0.0014 (J)				0.0071 (J)	0.0005 (J)
5/24/2017		0.0007 (J)	<0.005	0.002 (J)		
8/10/2017	0.0025 (J)	0.0006 (J)	<0.005	0.0012 (J)	0.0031 (J)	0.0003 (J)
11/14/2017	0.002 (J)	0.0005 (J)	<0.005	0.0014 (J)	0.0062 (J)	0.0004 (J)
6/6/2018	0.0031 (J)	0.00056 (J)	<0.005	0.0014 (J)		
6/7/2018					0.0083 (J)	<0.005
10/2/2018		<0.005	<0.005	0.00081 (J)		
10/3/2018	0.0023 (J)				0.005 (J)	<0.005
8/22/2019	0.0019 (J)	<0.005			0.012	0.0003 (J)
8/23/2019			<0.005	0.0027 (J)		
10/22/2019			<0.005	0.0022 (J)	0.0064	0.00061 (J)
10/23/2019	0.0021 (J)	0.00038 (J)				
3/24/2020					0.0087	
3/25/2020	0.0022 (J)	0.00047 (J)	<0.005	0.0022 (J)		<0.005
8/26/2020						0.00061 (J)
8/27/2020	0.0019 (J)	<0.005	<0.005	0.00086 (J)	0.011	
9/24/2020	0.0019 (J)	0.00044 (J)	<0.005			
9/25/2020				0.001 (J)	0.011	
9/28/2020						0.00048 (J)

Time Series

Constituent: Combined Radium 226 & 228 (pCi/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	0.804 (U)	1.32 (U)	0.587 (U)				
8/31/2016						0.621 (U)	
10/20/2016	1.13 (U)					1.4	
10/24/2016		1.3 (U)	0.979 (U)				
1/25/2017	0.888 (U)	1.04 (U)	0.038 (U)				
1/31/2017						0.906 (U)	
5/23/2017		0.541 (U)	0.898 (U)			0.388 (U)	
5/24/2017	0.622 (U)						
8/10/2017	0.745 (U)	0.536 (U)	0.759 (U)			1.03 (U)	
11/13/2017	0.778 (U)	0.786 (U)					
11/14/2017			0.0762 (U)			0.769 (U)	
6/4/2018	0.637 (U)	0.233 (U)					
6/5/2018			0.594 (U)				
6/6/2018						1.28 (U)	
10/1/2018	0.451 (U)	0.494 (U)	0.982				
10/3/2018						0.302 (U)	
8/21/2019	0.553 (U)	0.514 (U)	0.492 (U)				
8/22/2019						0.474 (U)	
10/21/2019	0.351 (U)						
10/22/2019		0.828 (U)	0.523 (U)				
10/23/2019						0.776 (U)	0.858 (U)
1/22/2020							1.04 (U)
3/4/2020							1.32
3/24/2020	0.26 (U)	0.677 (U)					1.23 (U)
3/25/2020						0.603 (U)	
4/9/2020			0.617 (U)				
7/21/2020							0.0938 (U)
8/25/2020	0.57 (U)	0.0182 (U)	0.587 (U)				
8/27/2020						0.109 (U)	1.17 (U)
9/18/2020	0.828 (U)	1.15 (U)		1.11 (U)	1.5 (U)		
9/22/2020			0.551 (U)				
9/24/2020						0.625 (U)	1.42
11/10/2020				0.234 (U)			
11/11/2020					0.776 (U)		
12/15/2020				0.529 (U)	1.23 (U)		

Time Series

Constituent: Combined Radium 226 & 228 (pCi/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	1.62	0.906 (U)	1.2	1.03	1.12	
10/20/2016					0.803 (U)	1.97
10/24/2016	1.01 (U)					
10/25/2016		1.03	1.11 (U)	1.07		
1/27/2017					1.08 (U)	
1/31/2017	0.976 (U)	0.868 (U)	1.45	0.588 (U)		1.03
5/23/2017	0.891 (U)				0.624 (U)	0.398 (U)
5/24/2017		0.728 (U)	0.393 (U)	0.593 (U)		
8/10/2017	0.601 (U)	1.35	0.84 (U)	0.691 (U)	0.695 (U)	0.938 (U)
11/14/2017	0.567 (U)	0.817 (U)	1.01 (U)	0.653 (U)	0.99 (U)	0.335 (U)
6/6/2018	0.836 (U)	0.559 (U)	0.365 (U)	0.939 (U)		
6/7/2018					1.04 (U)	0.696 (U)
10/2/2018		0.336 (U)	1.23	0.225 (U)		
10/3/2018	0.111 (U)				0.198 (U)	1.6 (U)
8/22/2019	0.946 (U)	0.694 (U)			0.333 (U)	0.904 (U)
8/23/2019			1.69	0.47 (U)		
10/22/2019			0.705 (U)	0.545 (U)	0.827 (U)	0.424 (U)
10/23/2019	0.571 (U)	0.584 (U)				
3/24/2020					0.815 (U)	
3/25/2020	0.403 (U)	0.663 (U)	0.673 (U)	0.508 (U)		0.915 (U)
8/26/2020						1.19
8/27/2020	0.37 (U)	0.416 (U)	0.264 (U)	0.989 (U)	0.193 (U)	
9/24/2020	0.804 (U)	1.11 (U)	0.576 (U)			
9/25/2020				0.584 (U)	0.155 (U)	
9/28/2020						0.613 (U)

Time Series

Constituent: Fluoride (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	0.07 (J)	0.04 (J)	0.2 (J)				
8/31/2016						0.05 (J)	
10/20/2016	0.07 (J)					0.03 (J)	
10/24/2016		0.05 (J)	0.16 (J)				
1/25/2017	0.14 (J)	<0.1	0.15 (J)				
1/31/2017						<0.1	
5/23/2017		0.004 (J)	0.18 (J)			<0.1	
5/24/2017	0.02 (J)						
8/10/2017	0.06 (J)	0.03 (J)	0.19 (J)			<0.1	
11/13/2017	<0.1	<0.1					
11/14/2017			0.16 (J)			<0.1	
6/4/2018	0.032 (J)	<0.1					
6/5/2018			0.18 (J)				
6/6/2018						<0.1	
10/1/2018	<0.1	<0.1	0.078 (J)				
10/3/2018						<0.1	
4/1/2019	0.042 (J)						
4/2/2019		<0.1	0.18 (J)				
4/4/2019						<0.1	
8/21/2019	0.048 (J)	<0.1	0.11 (J)				
8/22/2019						<0.1	
10/21/2019	0.12 (J)						
10/22/2019		0.05 (J)	0.18 (J)				
10/23/2019						<0.1	0.22 (J)
1/3/2020							<0.1
3/4/2020							<0.1
3/24/2020	0.076 (J)	<0.1					<0.1
3/25/2020						<0.1	
4/9/2020			0.14 (J)				
6/18/2020							<0.1
7/21/2020							<0.1
8/25/2020	0.052 (J)	<0.1	0.17				
8/27/2020						<0.1	<0.1
9/18/2020	<0.1	<0.1		0.067 (J)	0.098 (J)		
9/22/2020			0.16				
9/24/2020						<0.1	<0.1
11/10/2020				0.065 (J)			
11/11/2020					0.083 (J)		
12/15/2020				0.064 (J)	0.081 (J)		

Time Series

Constituent: Fluoride (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	0.06 (J)	0.15 (J)	0.08 (J)	0.12 (J)	0.09 (J)	0.18 (J)
10/20/2016					0.11 (J)	0.12 (J)
10/24/2016	0.13 (J)					
10/25/2016		0.09 (J)	0.16 (J)	0.17 (J)		
1/27/2017					0.28 (J)	
1/31/2017	<0.1	0.13 (J)	0.16 (J)	0.05 (J)		0.3
5/23/2017	0.15 (J)				0.01 (J)	0.14 (J)
5/24/2017		0.07 (J)	0.009 (J)	0.13 (J)		
8/10/2017	<0.1	0.03 (J)	<0.1	0.12 (J)	0.1 (J)	0.11 (J)
11/14/2017	<0.1	<0.1	<0.1	<0.1	<0.1	0.07 (J)
6/6/2018	<0.1	0.074 (J)	0.057 (J)	0.15 (J)		
6/7/2018					<0.1	0.3
10/2/2018		<0.1	<0.1	<0.1		
10/3/2018	<0.1				<0.1	0.12 (J)
4/3/2019			<0.1	0.05 (J)		
4/4/2019	0.042 (J)	0.03 (J)				
4/5/2019					0.19 (J)	0.33
6/18/2019						0.89
8/22/2019	<0.1	<0.1			<0.1	0.07 (J)
8/23/2019			<0.1	0.034 (J)		
10/22/2019			0.047 (J)	0.099 (J)	0.042 (J)	0.087 (J)
10/23/2019	<0.1	<0.1				
3/24/2020					<0.1	
3/25/2020	<0.1	<0.1	<0.1	0.075 (J)		0.078 (J)
8/26/2020						0.072 (J)
8/27/2020	<0.1	<0.1	<0.1	0.094 (J)	<0.1	
9/24/2020	<0.1	<0.1	0.064 (J)			
9/25/2020				0.091 (J)	<0.1	
9/28/2020						0.078 (J)

Time Series

Constituent: Lead (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	0.0001 (J)	<0.005	<0.005				
8/31/2016						<0.005	
10/20/2016	<0.005					<0.005	
10/24/2016		<0.005	<0.005				
1/25/2017	<0.005	<0.005	<0.005				
1/31/2017						<0.005	
5/23/2017		<0.005	<0.005			0.0009 (J)	
5/24/2017	<0.005						
8/10/2017	<0.005	<0.005	0.0001 (J)			<0.005	
11/13/2017	<0.005	<0.005					
11/14/2017			<0.005			<0.005	
6/4/2018	<0.005	<0.005					
6/5/2018			<0.005				
6/6/2018						<0.005	
10/1/2018	<0.005	<0.005	<0.005				
10/3/2018						<0.005	
8/21/2019	<0.005	<0.005	7.1E-05 (J)				
8/22/2019						<0.005	
10/21/2019	0.00016 (J)						
10/22/2019		<0.005	7.3E-05 (J)				
10/23/2019						<0.005	<0.005
1/3/2020							<0.005
3/4/2020							0.00011 (J)
3/24/2020	0.00058 (J)	0.00016 (J)					<0.005
3/25/2020						<0.005	
4/9/2020			0.00039 (J)				
6/18/2020							<0.005
7/21/2020							<0.005
8/25/2020	0.00036 (J)	0.00011 (J)	0.00022 (J)				
8/27/2020						<0.005	<0.005
9/18/2020	0.00026 (J)	6.5E-05 (J)		<0.005	<0.005		
9/22/2020			0.00096 (J)				
9/24/2020						<0.005	<0.005
11/10/2020				<0.005			
11/11/2020					<0.005		
12/15/2020				<0.005	0.00015 (J)		

Time Series

Constituent: Lead (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
10/20/2016					<0.005	<0.005
10/24/2016	<0.005					
10/25/2016		<0.005	<0.005	<0.005		
1/27/2017					<0.005	
1/31/2017	<0.005	<0.005	<0.005	<0.005		<0.005
5/23/2017	<0.005				<0.005	<0.005
5/24/2017		<0.005	<0.005	<0.005		
8/10/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
11/14/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
6/6/2018	<0.005	<0.005	<0.005	<0.005		
6/7/2018					<0.005	<0.005
10/2/2018		<0.005	<0.005	<0.005		
10/3/2018	<0.005				<0.005	<0.005
8/22/2019	<0.005	<0.005			<0.005	<0.005
8/23/2019			<0.005	5.8E-05 (J)		
10/22/2019			7.9E-05 (J)	5.4E-05 (J)	0.00016 (J)	0.00025 (J)
10/23/2019	0.00043 (J)	6.8E-05 (J)				
3/24/2020					0.00025 (J)	
3/25/2020	7.6E-05 (J)	8.5E-05 (J)	0.00021 (J)	<0.005		0.0001 (J)
8/26/2020						0.00036 (J)
8/27/2020	0.00018 (J)	<0.005	<0.005	<0.005	0.00014 (J)	
9/24/2020	0.00028 (J)	4.9E-05 (J)	0.00034 (J)			
9/25/2020				<0.005	0.00019 (J)	
9/28/2020						0.00022 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	0.0022 (J)	<0.03	<0.03				
8/31/2016						<0.03	
10/20/2016	<0.03					<0.03	
10/24/2016		<0.03	<0.03				
1/25/2017	<0.03	<0.03	<0.03				
1/31/2017						<0.03	
5/23/2017		<0.03	0.0011 (J)			<0.03	
5/24/2017	0.0017 (J)						
8/10/2017	0.0017 (J)	<0.03	<0.03			<0.03	
11/13/2017	<0.03	<0.03					
11/14/2017			<0.03			<0.03	
6/4/2018	0.0016 (J)	<0.03					
6/5/2018			0.001 (J)				
6/6/2018						<0.03	
10/1/2018	<0.03	<0.03	0.001 (J)				
10/3/2018						<0.03	
8/21/2019	0.0018 (J)	<0.03	0.0011 (J)				
8/22/2019						<0.03	
10/21/2019	0.0026 (J)						
10/22/2019		<0.03	0.0011 (J)				
10/23/2019						<0.03	0.0012 (J)
1/3/2020							0.0011 (J)
3/4/2020							0.0013 (J)
3/24/2020	0.0039 (J)	<0.03					0.00084 (J)
3/25/2020						<0.03	
4/9/2020			0.0017 (J)				
6/18/2020							0.0013 (J)
7/21/2020							0.0013 (J)
8/25/2020	0.0033 (J)	<0.03	0.0014 (J)				
8/27/2020						<0.03	0.0011 (J)
9/18/2020	0.0021 (J)	<0.03		0.0026 (J)	0.0051 (J)		
9/22/2020			0.0018 (J)				
9/24/2020						<0.03	0.0011 (J)
11/10/2020				0.0028 (J)			
11/11/2020					0.0036 (J)		
12/15/2020				0.0026 (J)	0.0045 (J)		

Time Series

Constituent: Lithium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.03	0.0034 (J)	<0.03	<0.03	0.0024 (J)	<0.03
10/20/2016					0.0027 (J)	<0.03
10/24/2016	<0.03					
10/25/2016		0.0043 (J)	<0.03	<0.03		
1/27/2017					<0.03	
1/31/2017	<0.03	0.0042 (J)	<0.03	<0.03		<0.03
5/23/2017	0.0012 (J)				<0.03	0.0012 (J)
5/24/2017		0.0039 (J)	<0.03	0.0012 (J)		
8/10/2017	0.0016 (J)	0.004 (J)	<0.03	<0.03	0.0021 (J)	<0.03
11/14/2017	0.0015 (J)	0.0044 (J)	<0.03	<0.03	<0.03	<0.03
6/6/2018	0.0017 (J)	0.0041 (J)	0.00099 (J)	0.0013 (J)		
6/7/2018					0.0011 (J)	0.0015 (J)
10/2/2018		0.0041 (J)	<0.03	0.0013 (J)		
10/3/2018	0.0016 (J)				0.0021 (J)	<0.03
8/22/2019	0.0015 (J)	0.004 (J)			0.0012 (J)	0.0018 (J)
8/23/2019			0.00092 (J)	0.0009 (J)		
10/22/2019			0.00094 (J)	0.00088 (J)	0.0028 (J)	0.0027 (J)
10/23/2019	0.002 (J)	0.0039 (J)				
3/24/2020					0.0029 (J)	
3/25/2020	0.0016 (J)	0.0041 (J)	0.00091 (J)	<0.03		0.0017 (J)
8/26/2020						0.0028 (J)
8/27/2020	0.0016 (J)	0.0037 (J)	<0.03	0.0011 (J)	0.0024 (J)	
9/24/2020	0.0017 (J)	0.0038 (J)	0.00098 (J)			
9/25/2020				0.001 (J)	0.0031 (J)	
9/28/2020						0.0022 (J)

Time Series

Constituent: Mercury (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	4E-05 (J)	4.1E-05 (J)	4E-05 (J)				
8/31/2016						<0.0005	
10/20/2016	<0.0005					<0.0005	
10/24/2016		<0.0005	<0.0005				
1/25/2017	4E-05 (J)	4E-05 (J)	4E-05 (J)				
1/31/2017						9.3E-05 (J)	
5/23/2017		<0.0005	<0.0005			<0.0005	
5/24/2017	<0.0005						
8/10/2017	<0.0005	<0.0005	<0.0005			<0.0005	
11/13/2017	<0.0005	<0.0005					
11/14/2017			<0.0005			<0.0005	
6/4/2018	<0.0005	<0.0005					
6/5/2018			<0.0005				
6/6/2018						<0.0005	
10/1/2018	4.3E-05 (J)	3.9E-05 (J)	4.3E-05 (J)				
10/3/2018						<0.0005	
8/21/2019	<0.0005	<0.0005	<0.0005				
8/22/2019						<0.0005	
10/23/2019							<0.0005
1/3/2020							<0.0005
3/4/2020							<0.0005
3/24/2020							<0.0005
6/18/2020							<0.0005
7/21/2020							<0.0005
8/25/2020	<0.0005	<0.0005	<0.0005				
8/27/2020						<0.0005	<0.0005
9/18/2020				<0.0005	<0.0005		
9/24/2020							<0.0005
11/10/2020				<0.0005			
11/11/2020					<0.0005		
12/15/2020				<0.0005	<0.0005		

Time Series

Constituent: Mercury (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.0005	<0.0005	<0.0005	<0.0005	7E-05 (J)	<0.0005
10/20/2016					<0.0005	<0.0005
10/24/2016	<0.0005					
10/25/2016		<0.0005	<0.0005	<0.0005		
1/27/2017					<0.0005	
1/31/2017	8E-05 (J)	<0.0005	<0.0005	8E-05 (J)		9E-05 (J)
5/23/2017	<0.0005				<0.0005	<0.0005
5/24/2017		<0.0005	<0.0005	<0.0005		
8/10/2017	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
11/14/2017	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6/6/2018	<0.0005	<0.0005	<0.0005	<0.0005		
6/7/2018					<0.0005	<0.0005
10/2/2018		<0.0005	<0.0005	<0.0005		
10/3/2018	<0.0005				<0.0005	<0.0005
8/22/2019	<0.0005	<0.0005			<0.0005	<0.0005
8/23/2019			<0.0005	<0.0005		
8/26/2020						<0.0005
8/27/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.01	<0.01	<0.01				
8/31/2016						<0.01	
10/20/2016	<0.01					<0.01	
10/24/2016		<0.01	<0.01				
1/25/2017	<0.01	<0.01	<0.01				
1/31/2017						<0.01	
5/23/2017		<0.01	<0.01			<0.01	
5/24/2017	<0.01						
8/10/2017	<0.01	<0.01	<0.01			<0.01	
11/13/2017	<0.01	<0.01					
11/14/2017			<0.01			<0.01	
6/4/2018	<0.01	<0.01					
6/5/2018			<0.01				
6/6/2018						<0.01	
10/1/2018	<0.01	<0.01	<0.01				
10/3/2018						<0.01	
8/21/2019	<0.01	<0.01	<0.01				
8/22/2019						<0.01	
10/23/2019							<0.01
1/3/2020							<0.01
3/4/2020							<0.01
3/24/2020							<0.01
6/18/2020							<0.01
7/21/2020							<0.01
8/25/2020	<0.01	<0.01	<0.01				
8/27/2020						<0.01	<0.01
9/18/2020				0.0015 (J)	0.0026 (J)		
9/24/2020							<0.01
11/10/2020				<0.01			
11/11/2020					0.0012 (J)		
12/15/2020				<0.01	0.00097 (J)		

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01
10/24/2016	<0.01					
10/25/2016		<0.01	<0.01	<0.01		
1/27/2017					<0.01	
1/31/2017	<0.01	<0.01	<0.01	<0.01		<0.01
5/23/2017	<0.01				<0.01	<0.01
5/24/2017		<0.01	<0.01	<0.01		
8/10/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
11/14/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
6/6/2018	<0.01	<0.01	<0.01	<0.01		
6/7/2018					<0.01	<0.01
10/2/2018		<0.01	<0.01	<0.01		
10/3/2018	<0.01				<0.01	<0.01
8/22/2019	<0.01	<0.01			<0.01	<0.01
8/23/2019			<0.01	<0.01		
8/26/2020						<0.01
8/27/2020	<0.01	<0.01	<0.01	<0.01	<0.01	

Time Series

Constituent: pH (s.u.) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	6.89	5.77	5.99				
8/31/2016						5.35	
10/20/2016	6.73					5.3	
10/24/2016		5.61	5.84				
1/25/2017	7.02	5.68	6.04				
1/31/2017						5.24	
5/23/2017		5.7	6.01			5.39	
5/24/2017	6.44						
8/10/2017	6.79	5.59	5.98			5.47	
11/13/2017	5.94	5.56					
11/14/2017			6.16			5.4	
6/4/2018	6.12	5.62					
6/5/2018			5.86				
6/6/2018						5.37	
10/1/2018	5.92	5.62	5.94				
10/3/2018						5.39	
4/1/2019	7.09						
4/2/2019		5.47	6				
4/4/2019						5.31	
6/18/2019						5.3	
8/21/2019	6.6	5.8	6.05				
8/22/2019						5.39	
10/21/2019	7.02						
10/22/2019		5.7	5.98				
10/23/2019						5.33	5.68
1/3/2020							5.64
3/4/2020							5.75
3/24/2020	7.37	5.64					5.58
3/25/2020						5.53	
4/9/2020			6.08				
6/18/2020							5.67
7/21/2020							5.72
8/25/2020	6.7	5.53	5.95				
8/27/2020						5.32	5.7
9/18/2020	6.46	5.58		7.54	7.5		
9/22/2020			6.1				
9/24/2020						5.48	5.82
11/10/2020				7.34			
11/11/2020					7.4		
12/15/2020				7.27	7.39		

Time Series

Constituent: pH (s.u.) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	5.54	6.5	6.11	6.78	6.07	7.03
10/20/2016					6	7.01
10/24/2016	5.48					
10/25/2016		6.34	6.04	6.55		
1/27/2017					6.2	
1/31/2017	5.51	6.43	5.94	6.5		6.96
5/23/2017	5.98				5.27	6.92
5/24/2017		6.31	6.06	6.42		
8/10/2017	5.63	6.45	6.06	6.63	6.27	6.99
11/14/2017	5.59	6.53	5.99	6.5	5.4	6.9
6/6/2018	5.49	6.49	6	6.59		
6/7/2018					5.29	7.03
10/2/2018		6.18	6.18	6.54		
10/3/2018	5.53				6.08	7.08
4/3/2019			6.06	6.42		
4/4/2019	5.44	6.17				
4/5/2019					5.99	6.96
6/17/2019	5.53					
8/22/2019	5.55	6.04			5.53	6.93
8/23/2019			6.26	6.76		
10/22/2019			6.19	6.58	6.17	7.03
10/23/2019	5.49	6.46				
3/24/2020					5.99	
3/25/2020	5.49	6.47	6.13	6.56		6.89
8/26/2020						6.97
8/27/2020	5.82	6.45	6.09	6.64	5.92	
9/24/2020	5.6	6.63	6.11			
9/25/2020				6.79	6.01	
9/28/2020						7.03

Time Series

Constituent: Selenium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.01	<0.01	0.0027 (J)				
8/31/2016						<0.01	
10/20/2016	<0.01					<0.01	
10/24/2016		<0.01	0.0034 (J)				
1/25/2017	<0.01	<0.01	0.0023 (J)				
1/31/2017						<0.01	
5/23/2017		<0.01	0.0024 (J)			<0.01	
5/24/2017	<0.01						
8/10/2017	<0.01	<0.01	0.0023 (J)			<0.01	
11/13/2017	<0.01	<0.01					
11/14/2017			<0.01			<0.01	
6/4/2018	<0.01	<0.01					
6/5/2018			0.0019 (J)				
6/6/2018						<0.01	
10/1/2018	<0.01	<0.01	0.0024 (J)				
10/3/2018						<0.01	
8/21/2019	<0.01	<0.01	0.0025 (J)				
8/22/2019						<0.01	
10/23/2019							<0.01
1/3/2020							0.0015 (J)
3/4/2020							<0.01
3/24/2020							<0.01
6/18/2020							<0.01
7/21/2020							<0.01
8/25/2020	<0.01	<0.01	<0.01				
8/27/2020						<0.01	<0.01
9/18/2020				<0.01	<0.01		
9/24/2020							<0.01
11/10/2020				<0.01			
11/11/2020					<0.01		
12/15/2020				<0.01	<0.01		

Time Series

Constituent: Selenium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01
10/24/2016	<0.01					
10/25/2016		<0.01	<0.01	<0.01		
1/27/2017					<0.01	
1/31/2017	<0.01	<0.01	<0.01	<0.01		<0.01
5/23/2017	<0.01				<0.01	<0.01
5/24/2017		<0.01	<0.01	<0.01		
8/10/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
11/14/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
6/6/2018	<0.01	<0.01	<0.01	<0.01		
6/7/2018					<0.01	<0.01
10/2/2018		<0.01	<0.01	<0.01		
10/3/2018	<0.01				<0.01	<0.01
8/22/2019	<0.01	<0.01			<0.01	<0.01
8/23/2019			<0.01	<0.01		
8/26/2020						<0.01
8/27/2020	<0.01	<0.01	<0.01	<0.01	<0.01	

Time Series

Constituent: Sulfate (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	1.6	0.63 (J)	14				
8/31/2016						110	
10/20/2016	1.6					110	
10/24/2016		0.62 (J)	11				
1/25/2017	1.6	0.62 (J)	12				
1/31/2017						120	
5/23/2017		0.55 (J)	12			97	
5/24/2017	1.4						
8/10/2017	1.6	0.66 (J)	11			96	
11/13/2017	1.3	0.61 (J)					
11/14/2017			11			110	
6/4/2018	1.4	0.73 (J)					
6/5/2018			9.9				
6/6/2018						95.5	
10/1/2018	1	0.52 (J)	6.7				
10/3/2018						121	
4/1/2019	1.7						
4/2/2019		0.78 (J)	8.7				
4/4/2019						95.1	
6/18/2019						102	
10/21/2019	1.8						
10/22/2019		0.6 (J)	6.8				
10/23/2019						101	<1
1/3/2020							380
3/4/2020							400
3/24/2020	1.6	<1					311
3/25/2020						85.5	
4/9/2020			6.6				
6/18/2020							349
7/21/2020							378
8/27/2020							382
9/18/2020	1	<1		3.5	9.5		
9/22/2020			5.3				
9/24/2020						97	370
11/10/2020				2.3			
11/11/2020					4.5		
12/15/2020				2.4	4.2		

Time Series

Constituent: Sulfate (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	280	190	130	36	150	88
10/20/2016					150	81
10/24/2016	280					
10/25/2016		190	130	41		
1/27/2017					150	
1/31/2017	300	210	130	37		87
5/23/2017	340				110	84
5/24/2017		180	130	40		
8/10/2017	300	180	130	40	140	78
11/14/2017	310	170	130	40	110	79
6/6/2018	351	168	132	49.7		
6/7/2018					103	60.1
10/2/2018		173	132	42.3		
10/3/2018	381				169	91.5
4/3/2019			139	36		
4/4/2019	358	185				
4/5/2019					141	75.1
6/17/2019	311	162	126	30.9		
6/18/2019					116	77
10/22/2019			123	23.2	133	80.9
10/23/2019	248	162				
3/24/2020					129	
3/25/2020	251	161	116	27.9		78.4
9/24/2020	293	177	126			
9/25/2020				24.7	146	
9/28/2020						86

Time Series

Constituent: Thallium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	<0.001	<0.001	<0.001				
8/31/2016						<0.001	
10/20/2016	<0.001					<0.001	
10/24/2016		<0.001	<0.001				
1/25/2017	<0.001	<0.001	<0.001				
1/31/2017						<0.001	
5/23/2017		<0.001	<0.001			<0.001	
5/24/2017	<0.001						
8/10/2017	<0.001	<0.001	<0.001			<0.001	
11/13/2017	<0.001	<0.001					
11/14/2017			<0.001			<0.001	
6/4/2018	<0.001	<0.001					
6/5/2018			<0.001				
6/6/2018						<0.001	
10/1/2018	<0.001	<0.001	<0.001				
10/3/2018						<0.001	
8/21/2019	<0.001	<0.001	<0.001				
8/22/2019						<0.001	
10/23/2019							<0.001
1/3/2020							8E-05 (J)
3/4/2020							<0.001
3/24/2020							<0.001
6/18/2020							<0.001
7/21/2020							<0.001
8/25/2020	<0.001	<0.001	<0.001				
8/27/2020						<0.001	<0.001
9/18/2020				<0.001	<0.001		
9/24/2020							<0.001
11/10/2020				<0.001			
11/11/2020					<0.001		
12/15/2020				<0.001	<0.001		

Time Series

Constituent: Thallium (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10/20/2016					<0.001	<0.001
10/24/2016	<0.001					
10/25/2016		<0.001	<0.001	<0.001		
1/27/2017					<0.001	
1/31/2017	<0.001	<0.001	<0.001	<0.001		<0.001
5/23/2017	<0.001				<0.001	<0.001
5/24/2017		<0.001	<0.001	<0.001		
8/10/2017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11/14/2017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
6/6/2018	<0.001	<0.001	<0.001	<0.001		
6/7/2018					<0.001	<0.001
10/2/2018		<0.001	<0.001	<0.001		
10/3/2018	<0.001				<0.001	<0.001
8/22/2019	<0.001	<0.001			<0.001	<0.001
8/23/2019			<0.001	<0.001		
8/26/2020						<0.001
8/27/2020	<0.001	<0.001	<0.001	<0.001	<0.001	

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-112 (bg)	HGWA-113 (bg)	HGWA-47 (bg)	HGWA-48D (bg)	HGWC-101	HGWC-102
8/30/2016	172	76	77				
8/31/2016						278	
10/20/2016	108					165	
10/24/2016		65	111				
1/25/2017	345	152 (o)	155				
1/31/2017						263	
5/23/2017		52	74			190	
5/24/2017	126						
8/10/2017	174	60	94			175	
11/13/2017	158	75					
11/14/2017			89			253	
6/4/2018	131	70					
6/5/2018			92				
6/6/2018						188	
10/1/2018	101	76	91				
10/3/2018						238	
4/1/2019	213						
4/2/2019		69	94				
4/4/2019						149	
10/21/2019	187						
10/22/2019		81	95				
10/23/2019						221	736
1/3/2020							714
3/4/2020							764
3/24/2020	207	52					521
3/25/2020						187	
4/9/2020			48				
6/18/2020							652
7/21/2020							669
8/27/2020							663
9/18/2020	139	62		195	224		
9/22/2020			84				
9/24/2020						170	696
11/10/2020				229			
11/11/2020					221		
12/15/2020				233	239		

Time Series

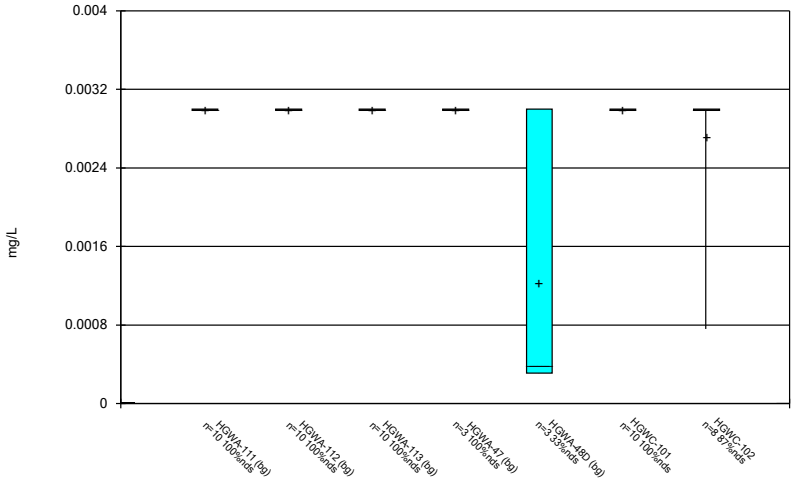
Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/17/2021 2:20 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/31/2016	483	389	235	182	381	373
10/20/2016					319	305
10/24/2016	517					
10/25/2016		316	223	172		
1/27/2017					407	
1/31/2017	516	437	346	252		361
5/23/2017	637				258	359
5/24/2017		352	234	184		
8/10/2017	459	356	254	208	359	325
11/14/2017	545	375	313	252	310	373
6/6/2018	559	385	278	224		
6/7/2018					223	338
10/2/2018		374	274	230		
10/3/2018	582				337	328
4/3/2019			273	210		
4/4/2019	535	340				
4/5/2019					334	308
6/17/2019	515	370	272			
6/18/2019					254	215
10/22/2019			308	212	348	354
10/23/2019	507	419				
3/24/2020					331	
3/25/2020	507	417	297	213		347
9/24/2020	517	411	253			
9/25/2020				188	340	
9/28/2020						332

FIGURE B.

Box & Whiskers Plot

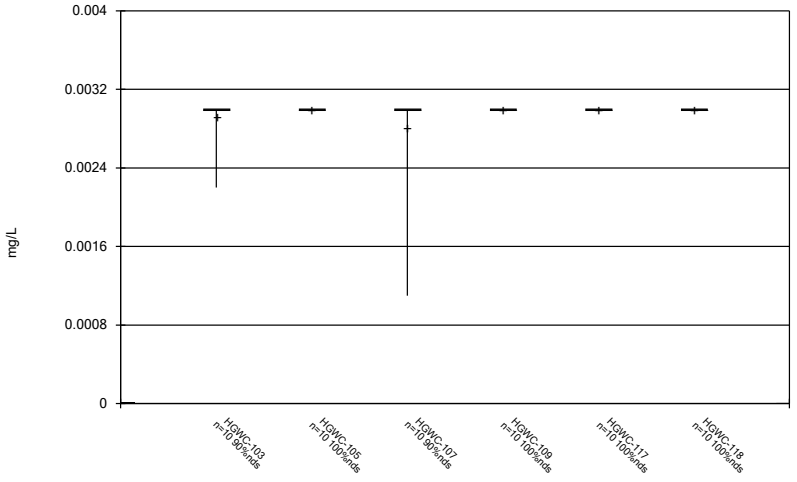


Constituent: Antimony Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

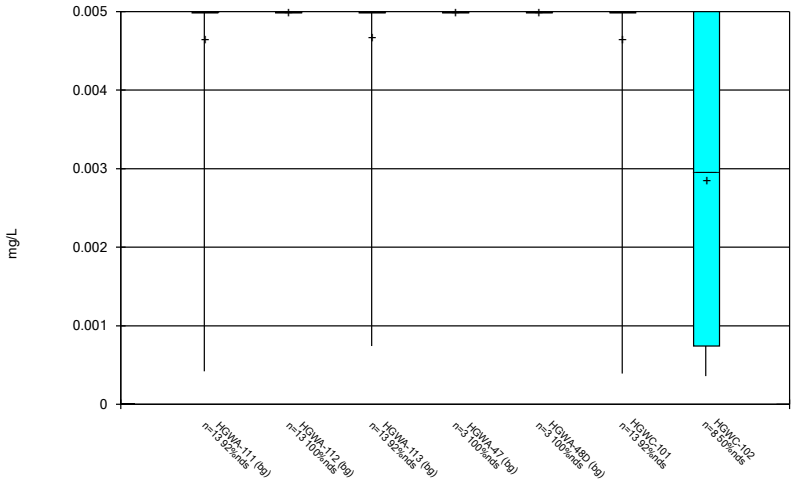


Constituent: Antimony Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

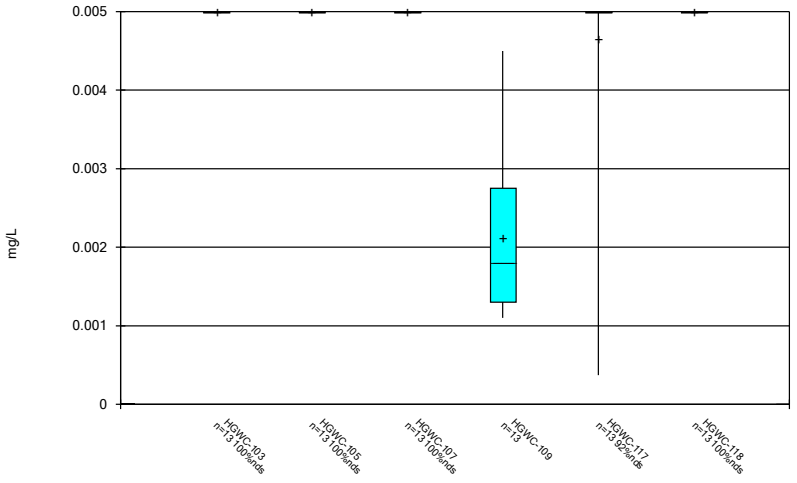


Constituent: Arsenic Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

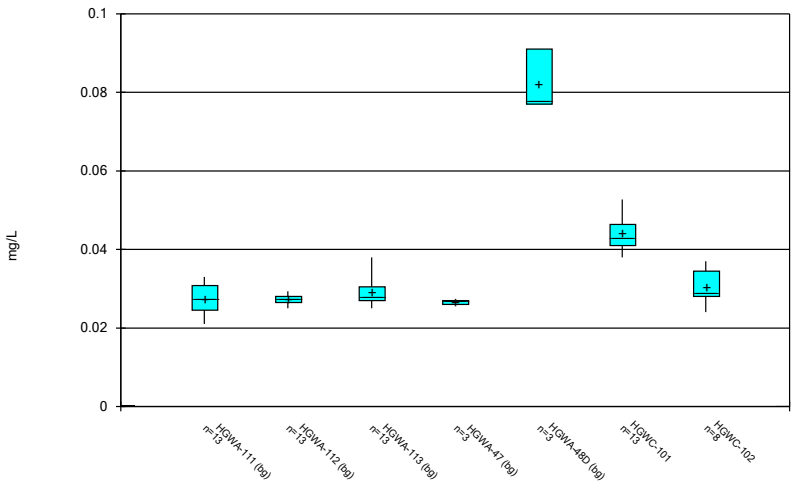
Box & Whiskers Plot



Constituent: Arsenic Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot

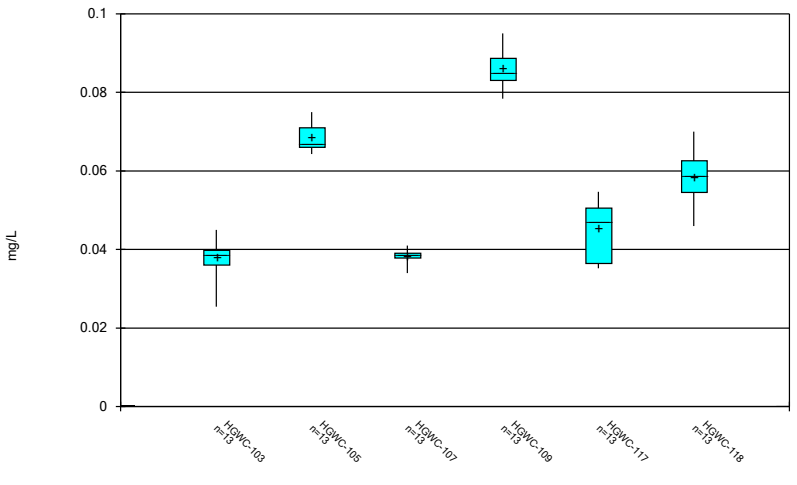


Constituent: Barium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

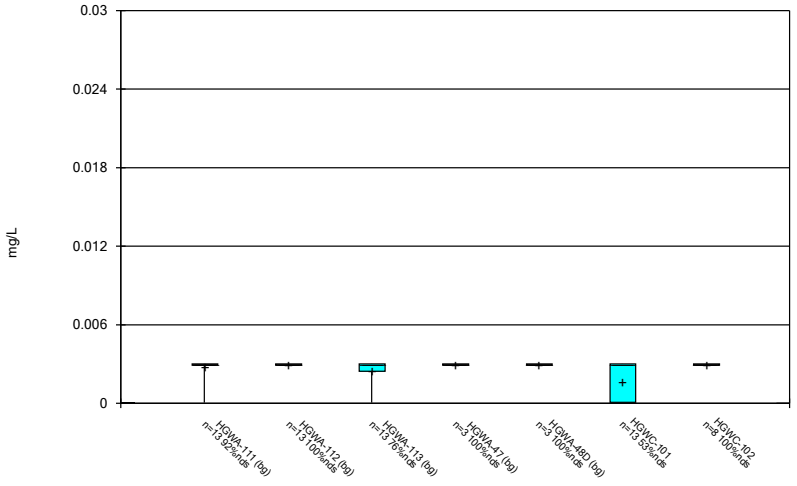


Constituent: Barium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

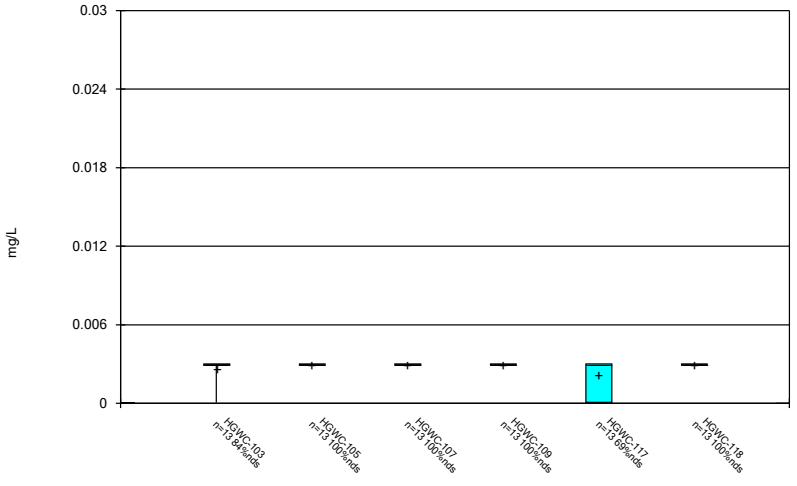


Constituent: Beryllium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

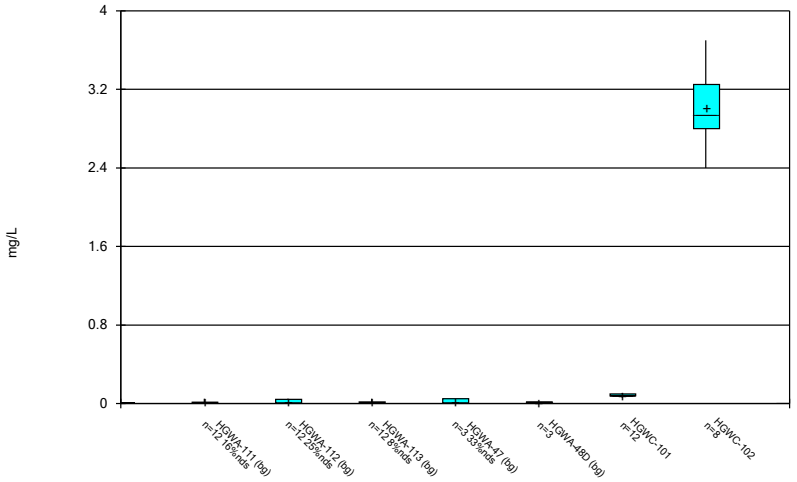


Constituent: Beryllium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

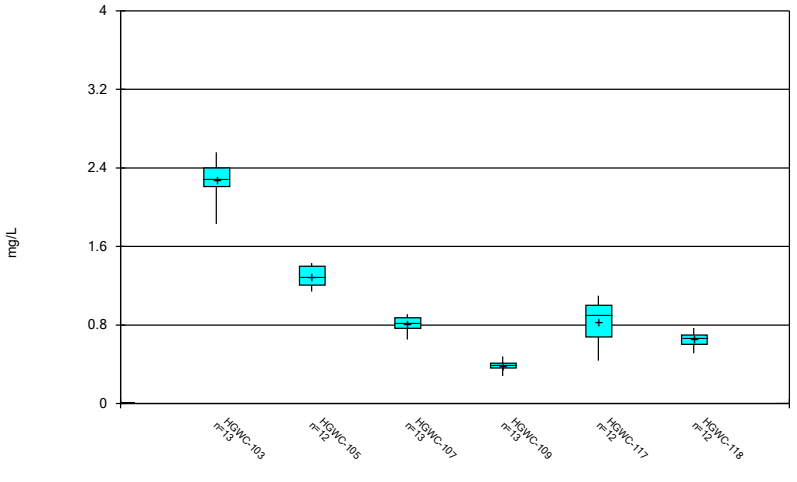


Constituent: Boron Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

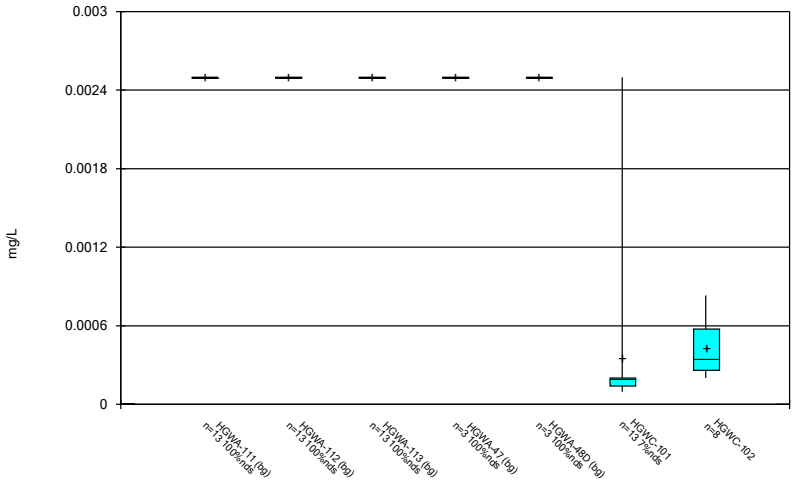


Constituent: Boron Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

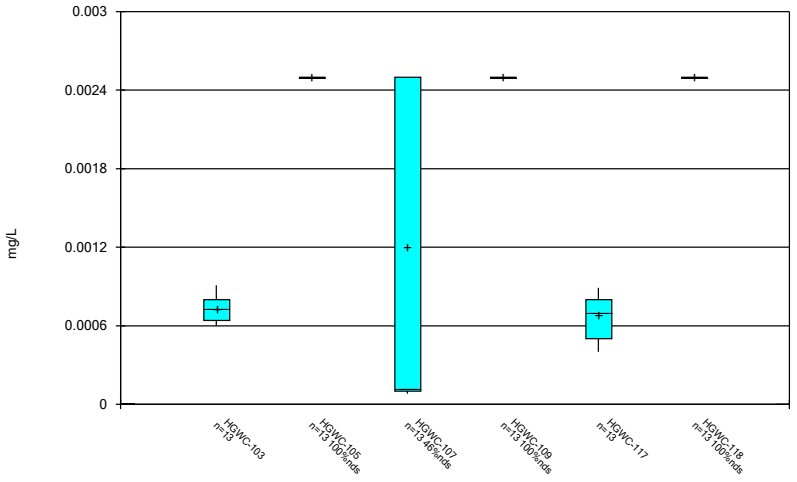


Constituent: Cadmium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

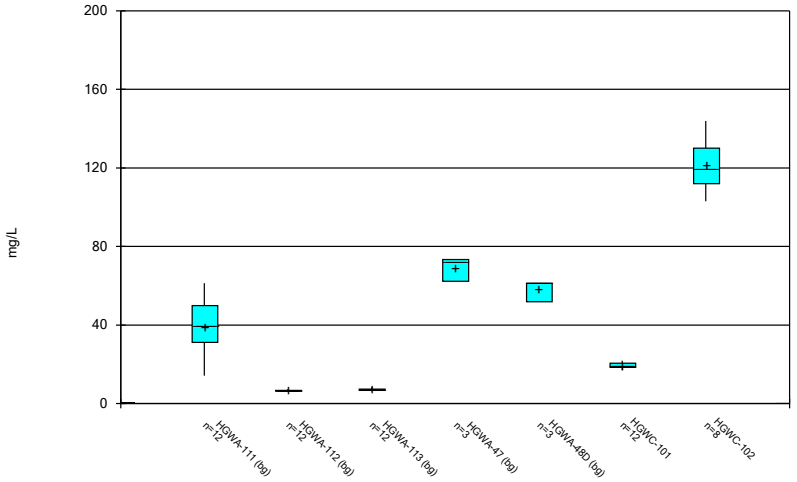


Constituent: Cadmium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

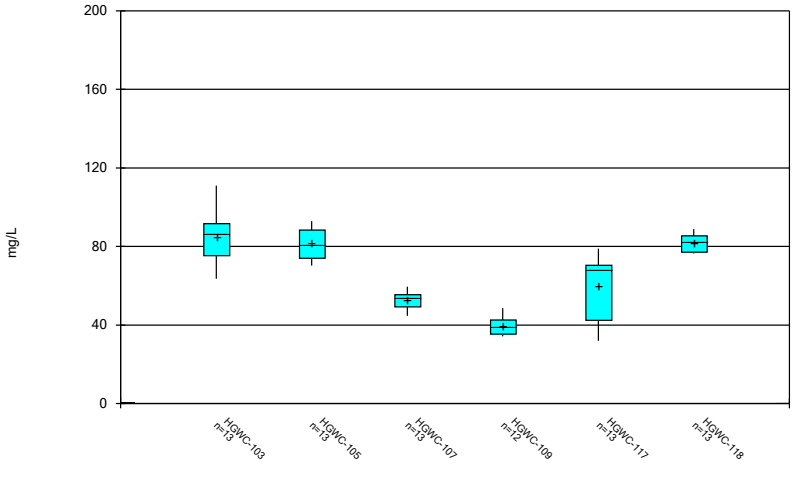


Constituent: Calcium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

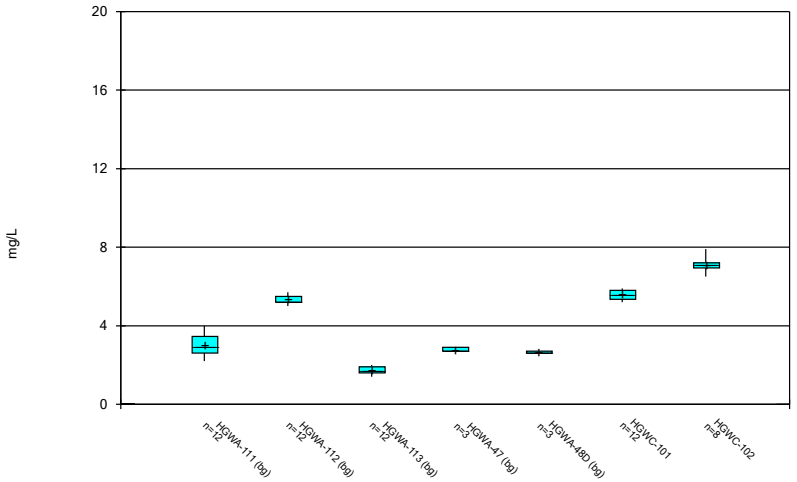


Constituent: Calcium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

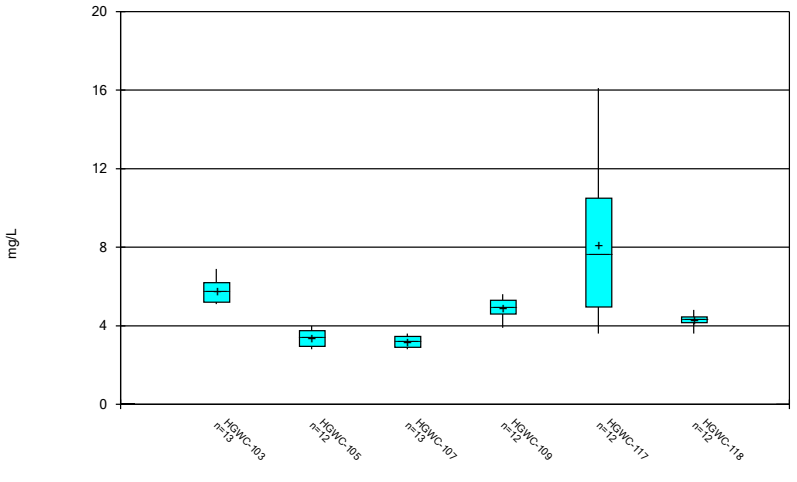


Constituent: Chloride Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

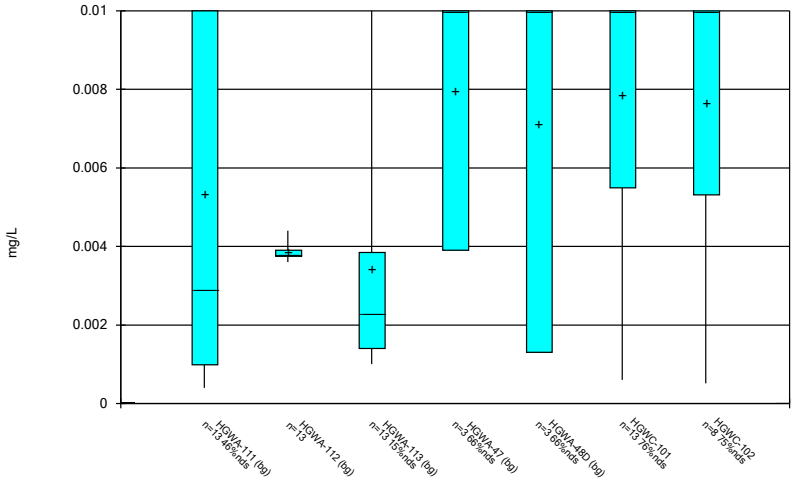
Box & Whiskers Plot



Constituent: Chloride Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot

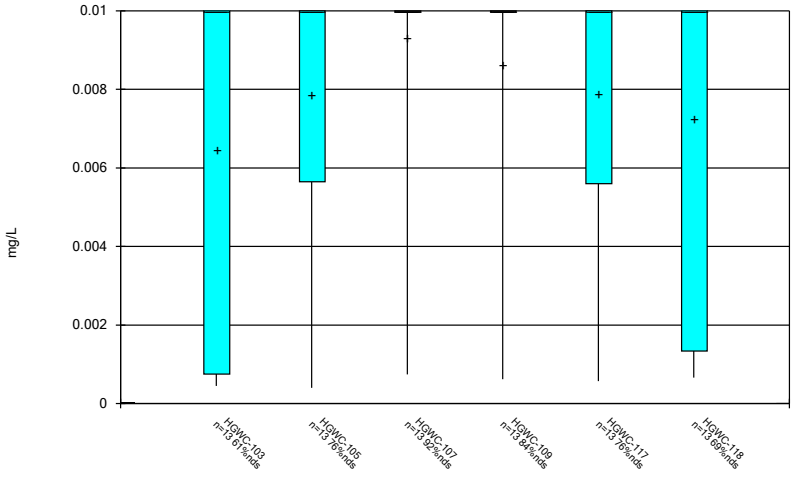


Constituent: Chromium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

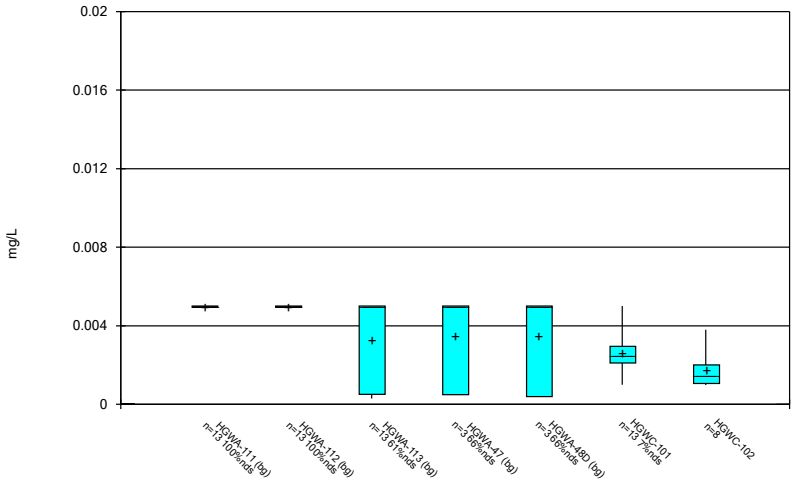


Constituent: Chromium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

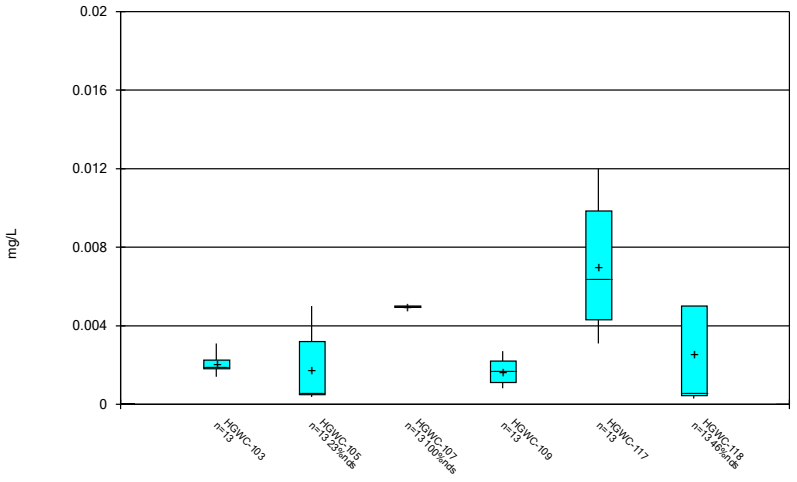


Constituent: Cobalt Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

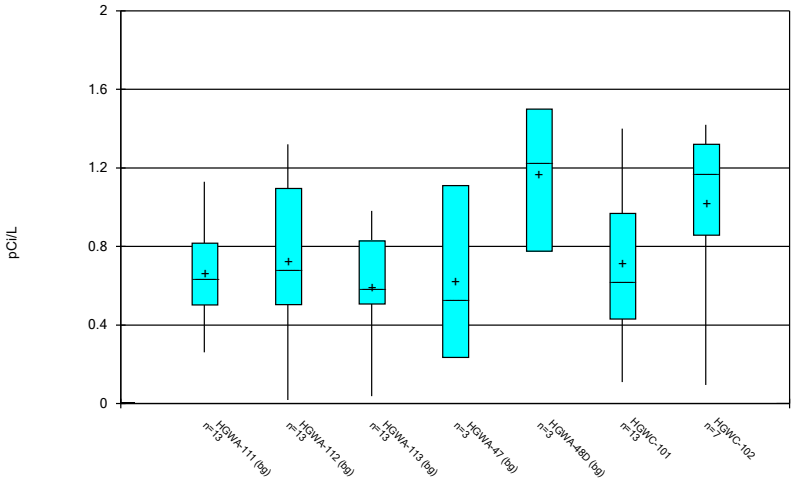
Box & Whiskers Plot



Constituent: Cobalt Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot

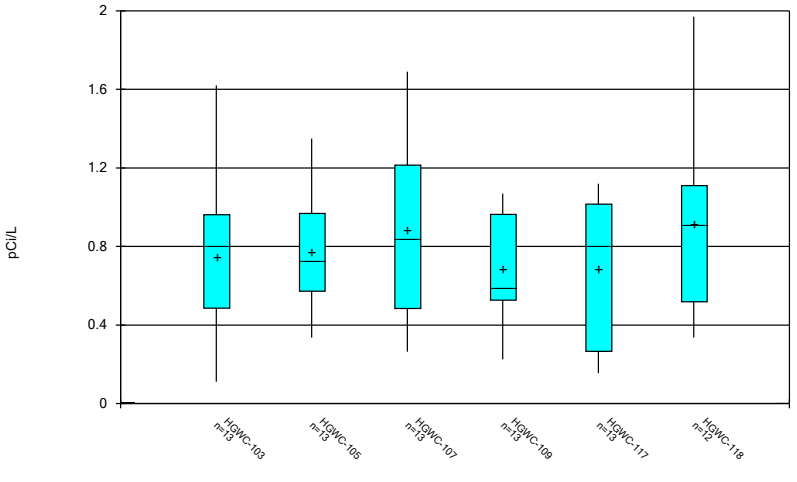


Constituent: Combined Radium 226 & 228 Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

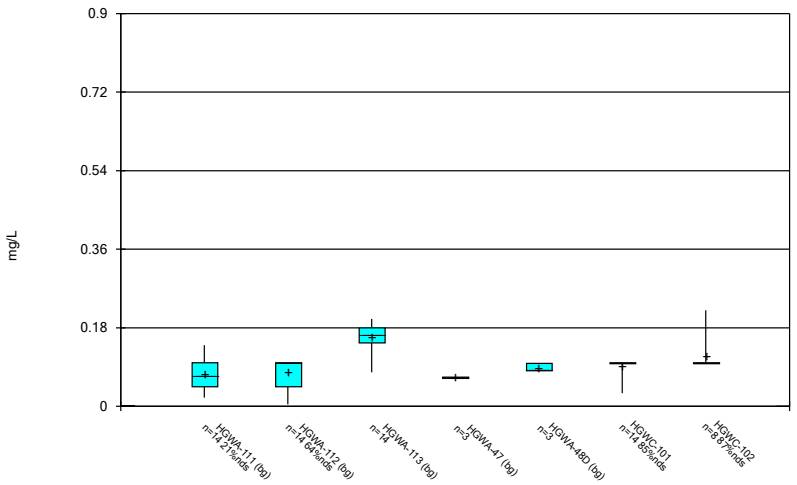


Constituent: Combined Radium 226 & 228 Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

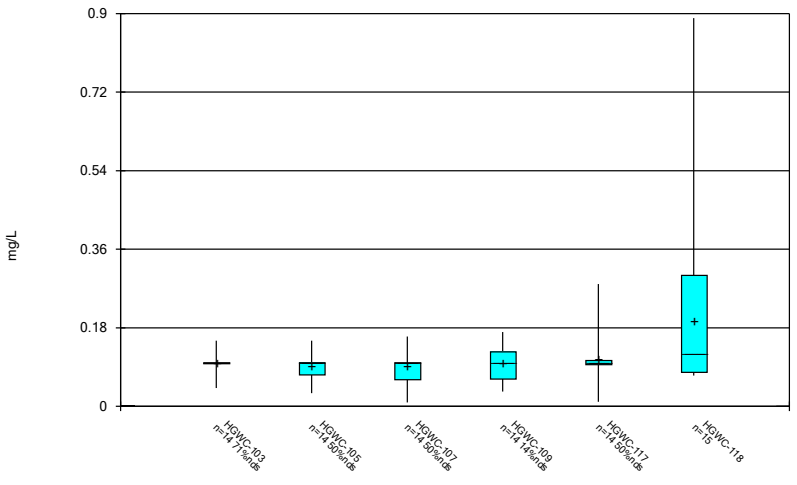


Constituent: Fluoride Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

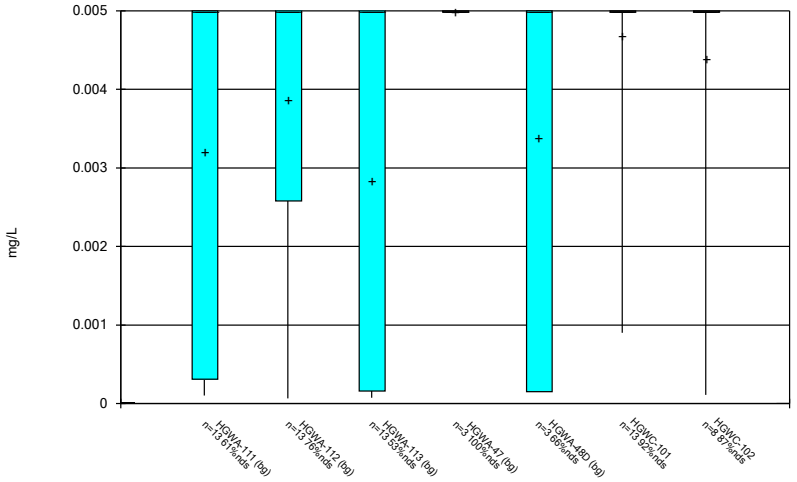
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot

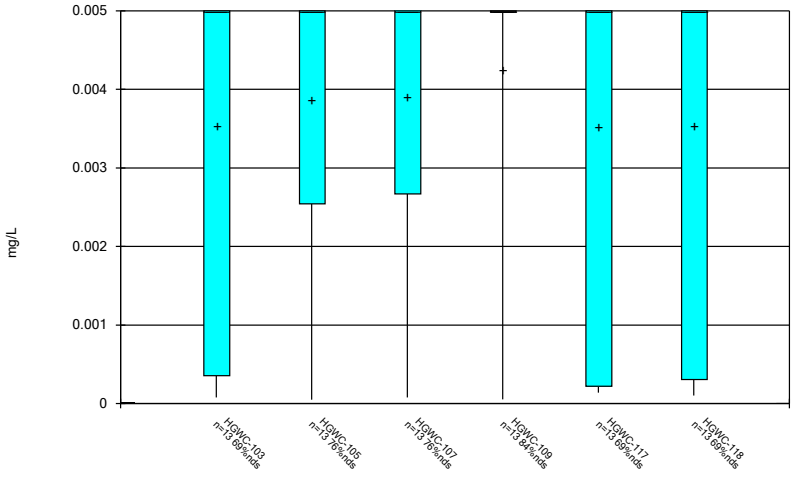


Constituent: Lead Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

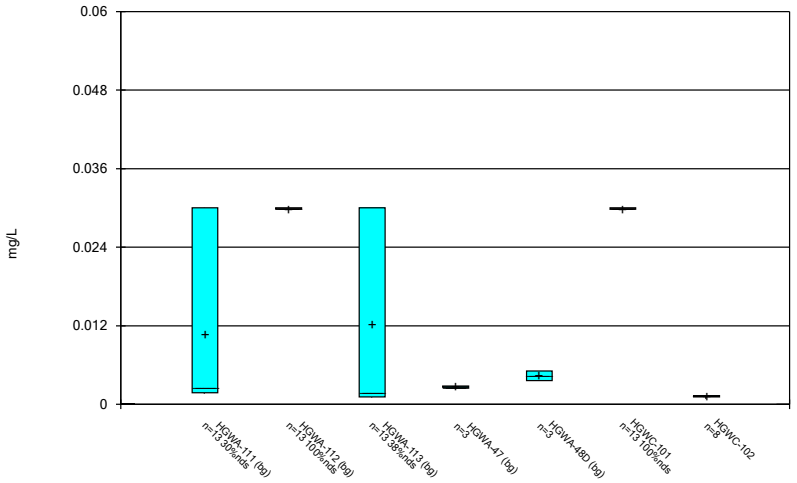


Constituent: Lead Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

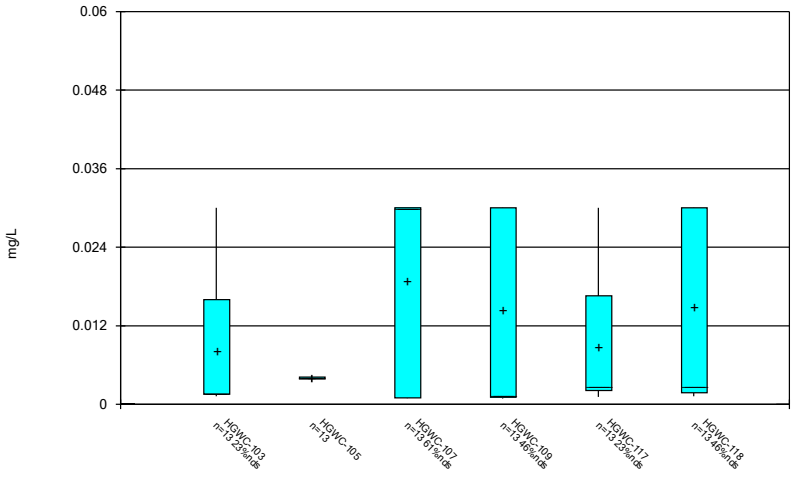


Constituent: Lithium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

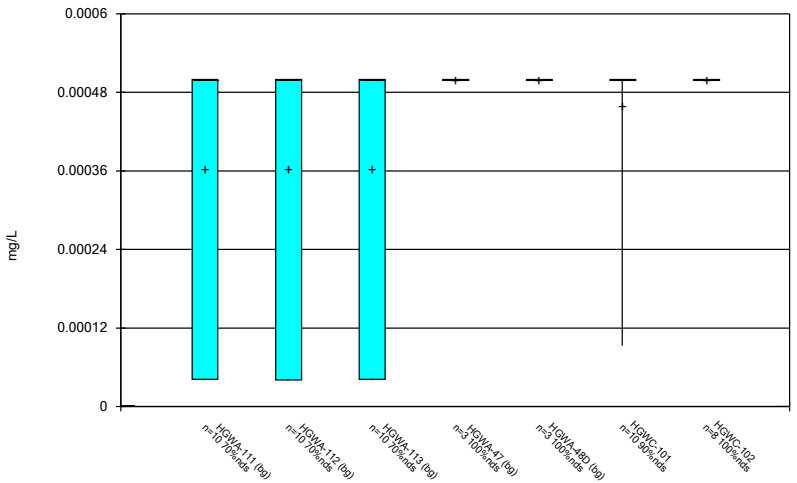
Box & Whiskers Plot



Constituent: Lithium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

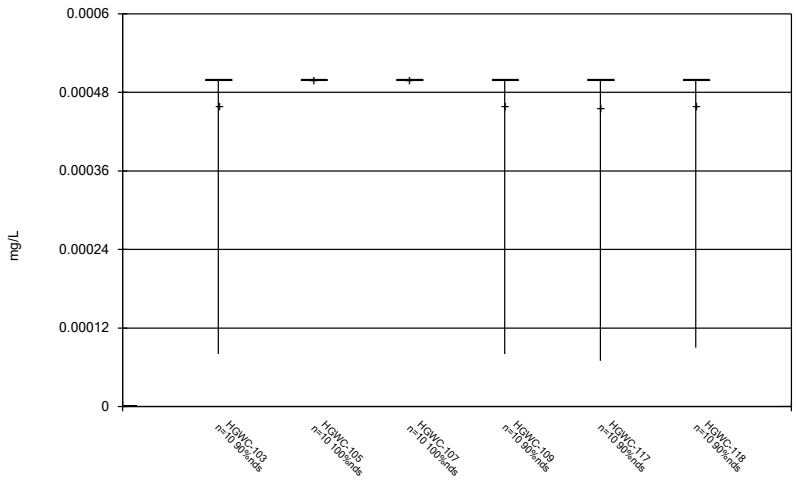
Box & Whiskers Plot



Constituent: Mercury Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

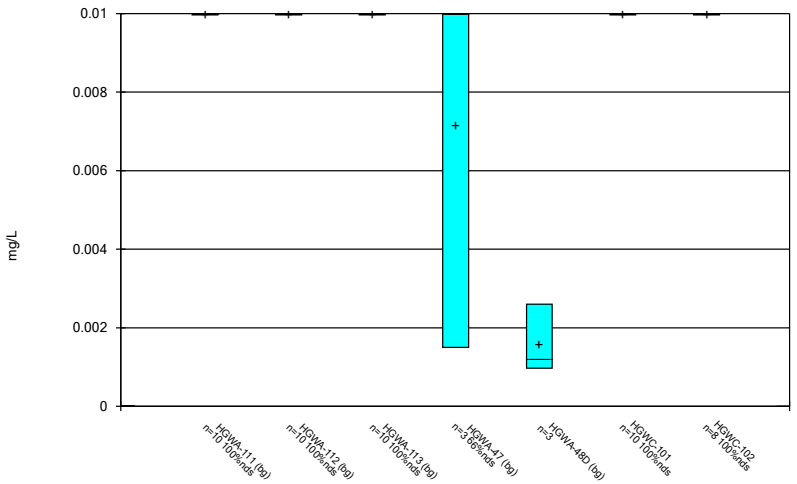
Box & Whiskers Plot



Constituent: Mercury Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

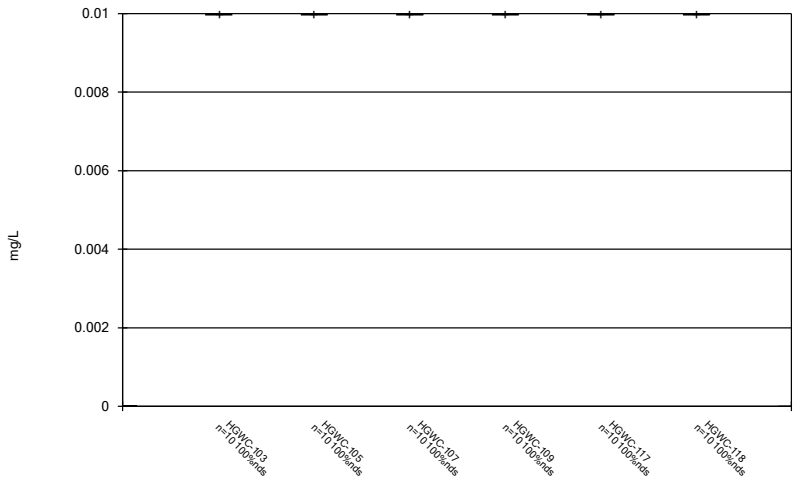
Box & Whiskers Plot



Constituent: Molybdenum Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

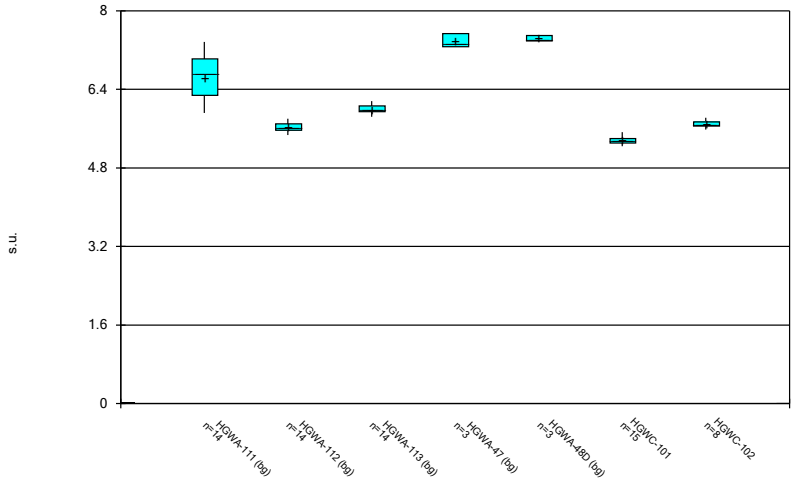
Box & Whiskers Plot



Constituent: Molybdenum Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot

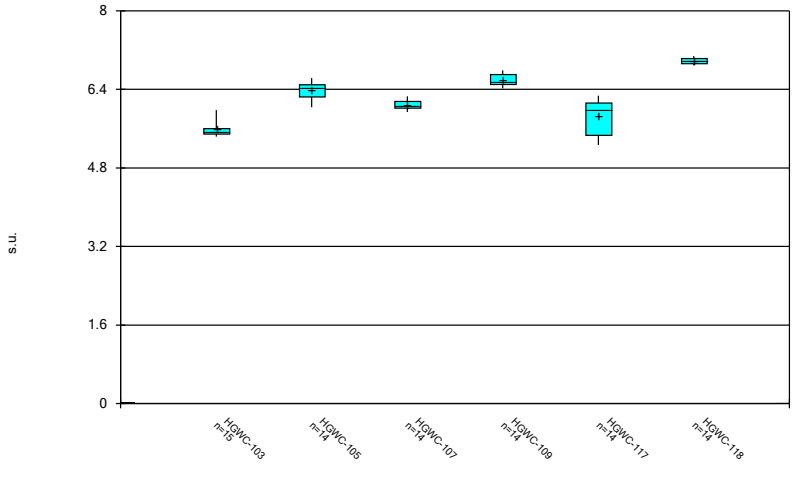


Constituent: pH Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

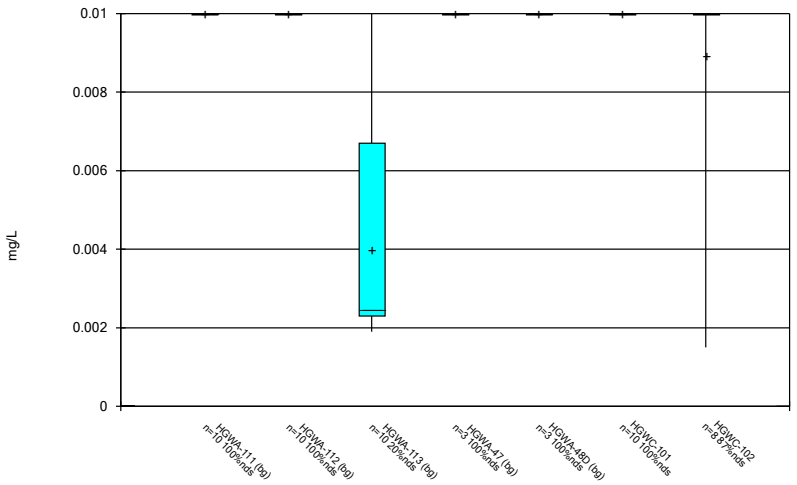


Constituent: pH Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

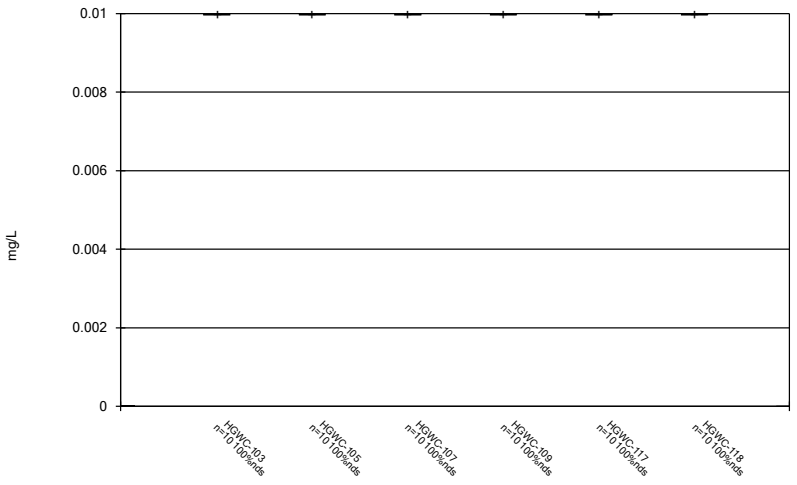


Constituent: Selenium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

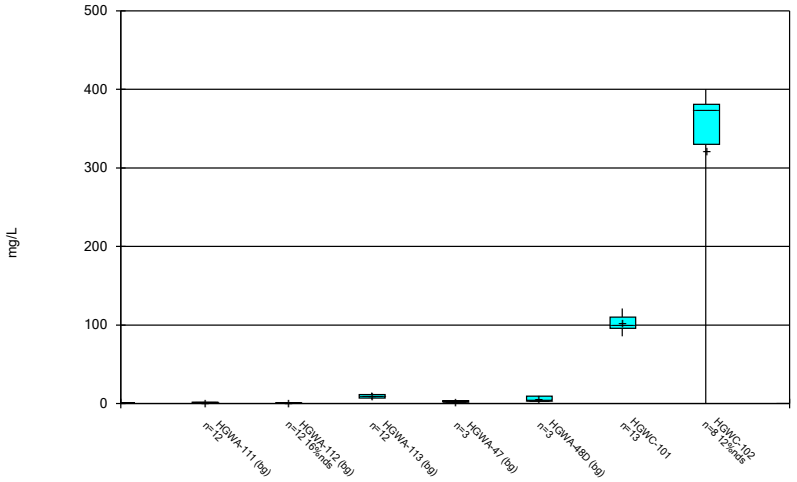
Box & Whiskers Plot



Constituent: Selenium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot

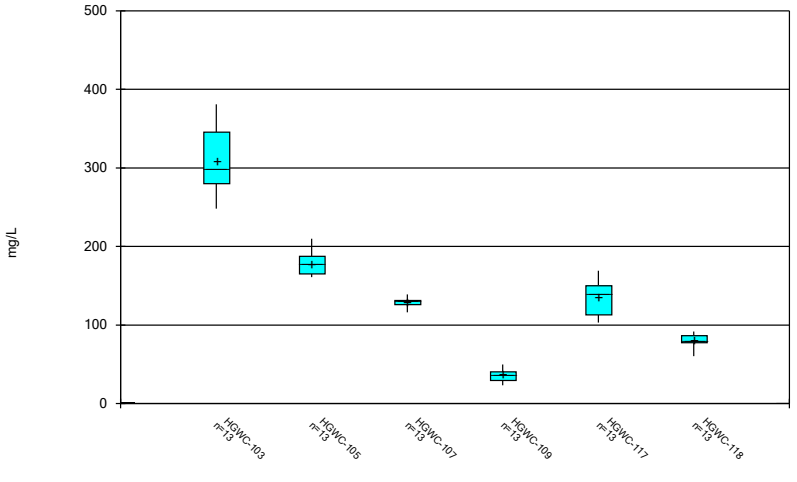


Constituent: Sulfate Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

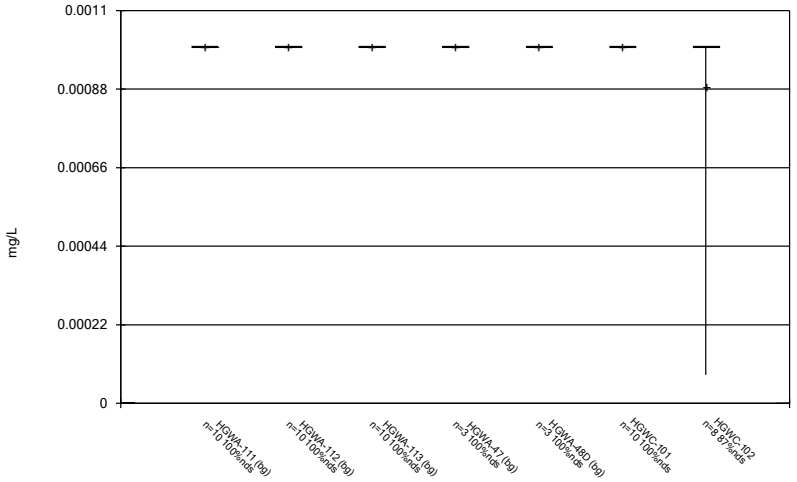


Constituent: Sulfate Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot

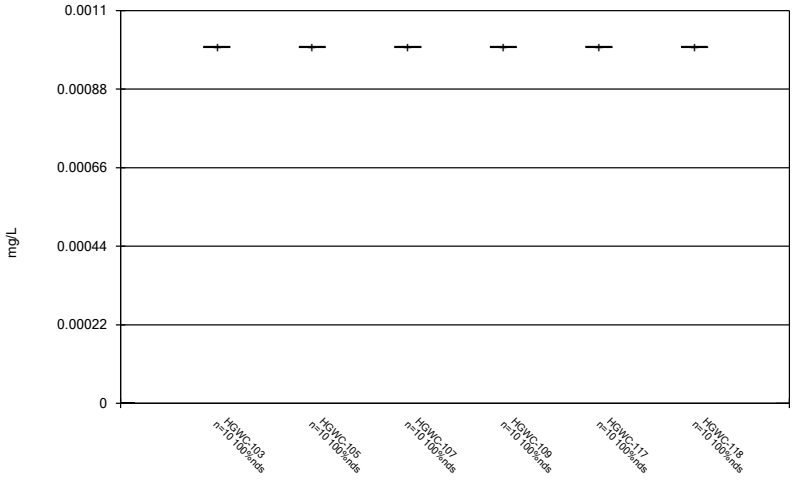


Constituent: Thallium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

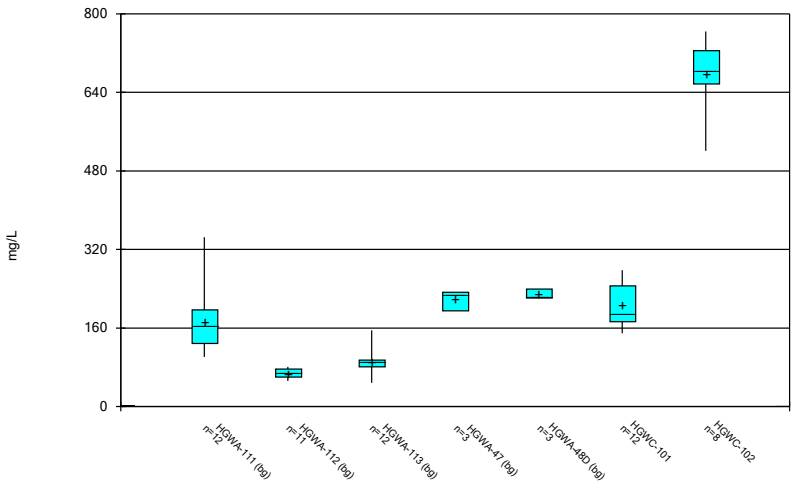
Box & Whiskers Plot



Constituent: Thallium Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot

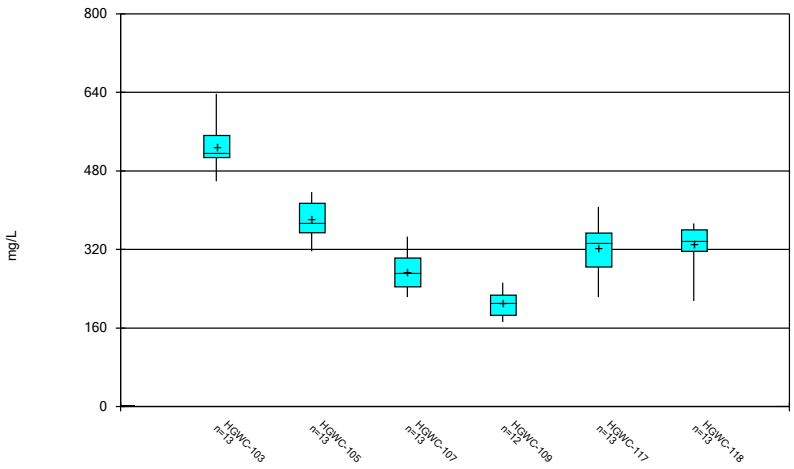


Constituent: Total Dissolved Solids Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 2/17/2021 1:34 PM

Plant Hammond Client: Southern Company Data: Hammond AP-4

FIGURE C.

Outlier Summary

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 12/22/2020, 5:22 AM

	HGWA-112 Total Dissolved Solids (mg/L)
1/25/2017	152 (o)

FIGURE D.

Interwell Prediction Limits - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 2:50 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-101	0.05	n/a	9/24/2020	0.1	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-102	0.05	n/a	9/24/2020	2.9	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-103	0.05	n/a	9/24/2020	2.2	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-105	0.05	n/a	9/24/2020	1.2	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-107	0.05	n/a	9/24/2020	0.88	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-109	0.05	n/a	9/25/2020	0.28	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-117	0.05	n/a	9/25/2020	1.1	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-118	0.05	n/a	9/28/2020	0.65	Yes	42	n/a	n/a	16.67	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-102	73.3	n/a	9/24/2020	120	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-103	73.3	n/a	9/24/2020	91.3	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	73.3	n/a	9/24/2020	92.9	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	73.3	n/a	9/28/2020	88.9	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-102	5.7	n/a	9/24/2020	7.2	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-103	5.7	n/a	9/24/2020	6	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-117	5.7	n/a	9/25/2020	16.1	Yes	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	9/24/2020	97	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-102	14	n/a	9/24/2020	370	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	9/24/2020	293	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	9/24/2020	177	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-107	14	n/a	9/24/2020	126	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	9/25/2020	24.7	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-117	14	n/a	9/25/2020	146	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-118	14	n/a	9/28/2020	86	Yes	42	n/a	n/a	4.762	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-102	288.3	n/a	9/24/2020	696	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-103	288.3	n/a	9/24/2020	517	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	288.3	n/a	9/24/2020	411	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	288.3	n/a	9/25/2020	340	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-118	288.3	n/a	9/28/2020	332	Yes	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2

Interwell Prediction Limits - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 2:50 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	**HGWC-101**	**0.05**	**n/a**	**9/24/2020**	**0.1**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-102**	**0.05**	**n/a**	**9/24/2020**	**2.9**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-103**	**0.05**	**n/a**	**9/24/2020**	**2.2**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-105**	**0.05**	**n/a**	**9/24/2020**	**1.2**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-107**	**0.05**	**n/a**	**9/24/2020**	**0.88**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-109**	**0.05**	**n/a**	**9/25/2020**	**0.28**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-117**	**0.05**	**n/a**	**9/25/2020**	**1.1**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	**HGWC-118**	**0.05**	**n/a**	**9/28/2020**	**0.65**	**Yes**	**42**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	HGWC-101	73.3	n/a	9/24/2020	20.3	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	**HGWC-102**	**73.3**	**n/a**	**9/24/2020**	**120**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**HGWC-103**	**73.3**	**n/a**	**9/24/2020**	**91.3**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**HGWC-105**	**73.3**	**n/a**	**9/24/2020**	**92.9**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	HGWC-107	73.3	n/a	9/24/2020	55.4	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-109	73.3	n/a	9/25/2020	48.5	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-117	73.3	n/a	9/25/2020	72.8	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Calcium (mg/L)	**HGWC-118**	**73.3**	**n/a**	**9/28/2020**	**88.9**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	HGWC-101	5.7	n/a	9/24/2020	5.5	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	**HGWC-102**	**5.7**	**n/a**	**9/24/2020**	**7.2**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-103**	**5.7**	**n/a**	**9/24/2020**	**6**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	HGWC-105	5.7	n/a	9/24/2020	3.9	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-107	5.7	n/a	9/24/2020	3.5	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-109	5.7	n/a	9/25/2020	4.1	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Chloride (mg/L)	**HGWC-117**	**5.7**	**n/a**	**9/25/2020**	**16.1**	**Yes**	**42**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	HGWC-118	5.7	n/a	9/28/2020	4	No	42	n/a	n/a	0	n/a	n/a	0.001041	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-101	0.181	n/a	9/24/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-102	0.181	n/a	9/24/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-103	0.181	n/a	9/24/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-105	0.181	n/a	9/24/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-107	0.181	n/a	9/24/2020	0.064J	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-109	0.181	n/a	9/25/2020	0.091J	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-117	0.181	n/a	9/25/2020	0.1ND	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-118	0.181	n/a	9/28/2020	0.078J	No	48	0.0799	0.05086	25	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
pH (s.u.)	HGWC-101	7.54	5.47	9/24/2020	5.48	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-102	7.54	5.47	9/24/2020	5.82	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-103	7.54	5.47	9/24/2020	5.6	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-105	7.54	5.47	9/24/2020	6.63	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-107	7.54	5.47	9/24/2020	6.11	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-109	7.54	5.47	9/25/2020	6.79	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-117	7.54	5.47	9/25/2020	6.01	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-118	7.54	5.47	9/28/2020	7.03	No	48	n/a	n/a	0	n/a	n/a	0.001623	NP Inter (normality) 1 of 2
Sulfate (mg/L)	**HGWC-101**	**14**	**n/a**	**9/24/2020**	**97**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-102**	**14**	**n/a**	**9/24/2020**	**370**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-103**	**14**	**n/a**	**9/24/2020**	**293**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-105**	**14**	**n/a**	**9/24/2020**	**177**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-107**	**14**	**n/a**	**9/24/2020**	**126**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-109**	**14**	**n/a**	**9/25/2020**	**24.7**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-117**	**14**	**n/a**	**9/25/2020**	**146**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-118**	**14**	**n/a**	**9/28/2020**	**86**	**Yes**	**42**	**n/a**	**n/a**	**4.762**	**n/a**	**n/a**	**0.001041**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	HGWC-101	288.3	n/a	9/24/2020	170	No	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	**HGWC-102**	**288.3**	**n/a**	**9/24/2020**	**696**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-103**	**288.3**	**n/a**	**9/24/2020**	**517**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-105**	**288.3**	**n/a**	**9/24/2020**	**411**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	HGWC-107	288.3	n/a	9/24/2020	253	No	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-109	288.3	n/a	9/25/2020	188	No	41	4.893	0.8528	0	None	x^(1/3)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	**HGWC-117**	**288.3**	**n/a**	**9/25/2020**	**340**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-118**	**288.3**	**n/a**	**9/28/2020**	**332**	**Yes**	**41**	**4.893**	**0.8528**	**0**	**None**	**x^(1/3)**	**0.0009403**	**Param Inter 1 of 2**

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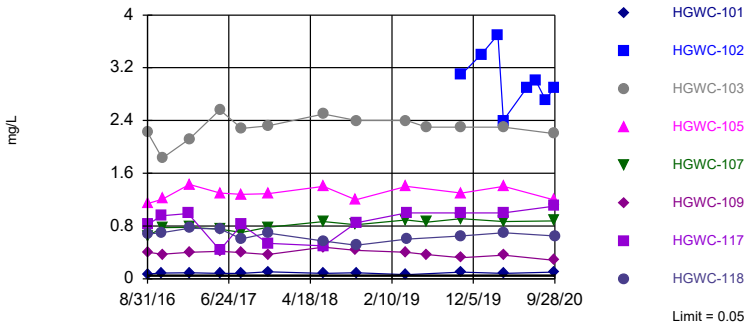
Exceeds Limit: HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. 16.67% NDs. Annual per-constituent alpha = 0.01653. Individual comparison alpha = 0.001041 (1 of 2). Comparing 8 points to limit.

Constituent: Boron Analysis Run 2/17/2021 2:48 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

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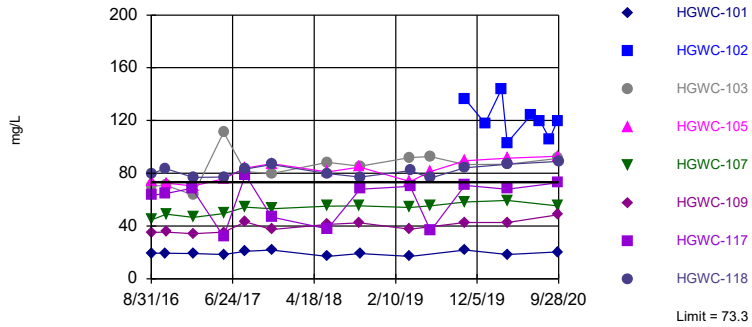
Exceeds Limit: HGWC-102, HGWC-103, HGWC-105, HGWC-118

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. Annual per-constituent alpha = 0.01653. Individual comparison alpha = 0.001041 (1 of 2). Comparing 8 points to limit.

Constituent: Calcium Analysis Run 2/17/2021 2:48 PM View: Interwell PLs

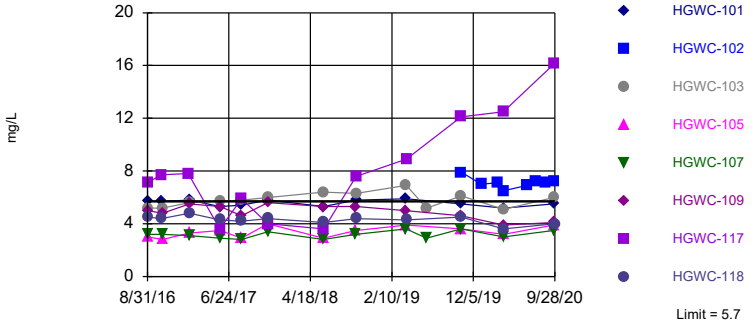
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Exceeds Limit: HGWC-102, HGWC-103, HGWC-117

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. Annual per-constituent alpha = 0.01653. Individual comparison alpha = 0.001041 (1 of 2). Comparing 8 points to limit.

Constituent: Chloride Analysis Run 2/17/2021 2:48 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

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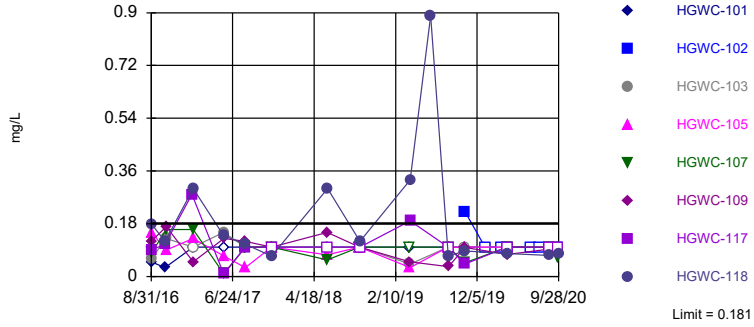
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.0799, Std. Dev.=0.05086, n=48, 25% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9437, critical = 0.929. Kappa = 1.988 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 8 points to limit.

Constituent: Fluoride Analysis Run 2/17/2021 2:48 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

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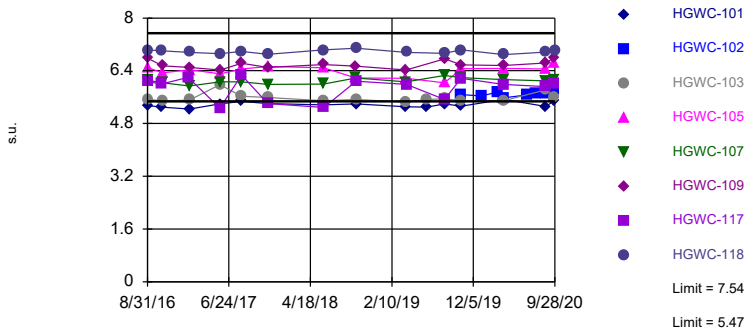
Within Limits

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. Limits are highest and lowest of 48 background values. Annual per-constituent alpha = 0.02581. Individual comparison alpha = 0.001623 (1 of 2). Comparing 8 points to limit.

Constituent: pH Analysis Run 2/17/2021 2:48 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

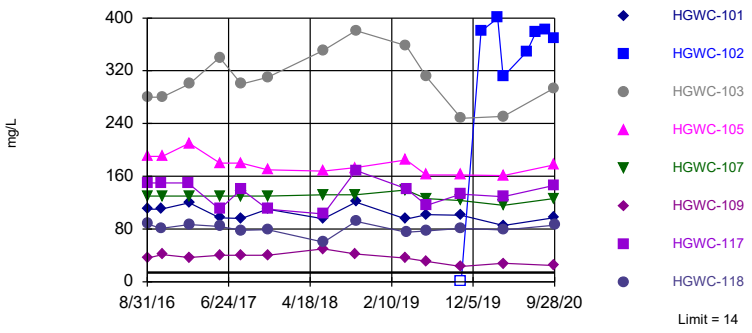
Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Exceeds Limit: HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. 4.762% NDs. Annual per-constituent alpha = 0.01653. Individual comparison alpha = 0.001041 (1 of 2). Comparing 8 points to limit.

Constituent: Sulfate Analysis Run 2/17/2021 2:48 PM View: Interwell PLs

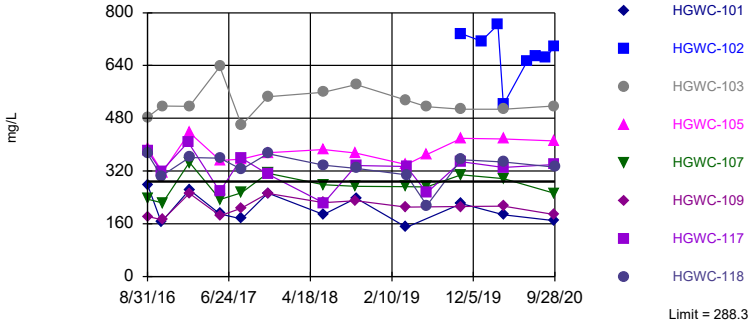
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Exceeds Limit: HGWC-102, HGWC-103, HGWC-105, HGWC-117, HGWC-118

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=4.893, Std. Dev.=0.8528, n=41. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9297, critical = 0.92. Kappa = 2.009 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 8 points to limit.

Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:48 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-113 (bg)	HGWA-112 (bg)	HGWC-103	HGWC-105	HGWC-107	HGWC-101	HGWC-109	HGWC-118
8/30/2016	<0.1	<0.1	<0.1						
8/31/2016				2.22	1.14	0.651	0.0724 (J)	0.402	0.681
10/20/2016	0.016 (J)						0.0877 (J)		0.697
10/24/2016		0.0226 (J)	0.0367 (J)	1.83					
10/25/2016					1.21	0.778		0.372	
1/25/2017	0.0095 (J)	0.009 (J)	0.0075 (J)						
1/27/2017									
1/31/2017				2.12	1.43	0.782	0.0928	0.404	0.768
5/23/2017		0.0082 (J)	0.0073 (J)	2.56			0.0795		0.754
5/24/2017	0.0094 (J)				1.3	0.753		0.415	
8/10/2017	<0.1	0.0061 (J)	<0.1	2.28	1.28	0.702	0.0814	0.397	0.608
11/13/2017	0.0103 (J)		0.0089 (J)						
11/14/2017		0.012 (J)		2.32	1.29	0.78	0.108	0.366	0.691
6/4/2018	0.0065 (J)		0.007 (J)						
6/5/2018		0.0085 (J)							
6/6/2018				2.5	1.4	0.87	0.081	0.48	
6/7/2018									0.57
10/1/2018	0.0054 (J)	0.0042 (J)	<0.1						
10/2/2018					1.2	0.82		0.43	
10/3/2018				2.4			0.092		0.51
4/1/2019	0.0076 (J)								
4/2/2019		0.0059 (J)	0.0043 (J)						
4/3/2019						0.89		0.4	
4/4/2019				2.4	1.4 (X)		0.06 (X)		
4/5/2019									0.6 (X)
6/17/2019				2.3		0.86		0.37	
10/21/2019	0.0097 (J)								
10/22/2019		0.01 (J)	0.016 (J)			0.91		0.32	0.65
10/23/2019				2.3	1.3		0.1		
1/3/2020									
3/4/2020									
3/24/2020	0.011 (J)		0.012 (J)						
3/25/2020				2.3	1.4	0.87	0.08 (J)	0.36	0.7
4/9/2020		0.012 (J)							
6/18/2020									
7/21/2020									
8/27/2020									
9/18/2020	0.011 (J)		0.008 (J)						
9/22/2020		0.021 (J)							
9/24/2020				2.2	1.2	0.88	0.1		
9/25/2020								0.28	
9/28/2020									0.65
11/10/2020									
11/11/2020									
12/15/2020									

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-117	HGWC-102	HGWA-47 (bg)	HGWA-48D (bg)
8/30/2016				
8/31/2016	0.821			
10/20/2016	0.956			
10/24/2016				
10/25/2016				
1/25/2017				
1/27/2017	0.99			
1/31/2017				
5/23/2017	0.438			
5/24/2017				
8/10/2017	0.821			
11/13/2017				
11/14/2017	0.536			
6/4/2018				
6/5/2018				
6/6/2018				
6/7/2018	0.5			
10/1/2018				
10/2/2018				
10/3/2018	0.85			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019				
4/5/2019	1 (X)			
6/17/2019				
10/21/2019				
10/22/2019	1			
10/23/2019		3.1		
1/3/2020		3.4		
3/4/2020		3.7		
3/24/2020	1	2.4		
3/25/2020				
4/9/2020				
6/18/2020		2.9		
7/21/2020		3		
8/27/2020		2.7		
9/18/2020			0.0082 (J)	0.015 (J)
9/22/2020				
9/24/2020		2.9		
9/25/2020	1.1			
9/28/2020				
11/10/2020			0.0064 (J)	
11/11/2020				0.014 (J)
12/15/2020			<0.1	0.0083 (J)

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-113 (bg)	HGWA-112 (bg)	HGWC-105	HGWC-107	HGWC-103	HGWC-109	HGWC-101	HGWC-117
8/30/2016	40.3	6.72	6.69						
8/31/2016				74.2	44.7	70.4	35.1	19.4	63.4
10/20/2016	38.7							19.3	64.4
10/24/2016		6.4	6.25			70.9			
10/25/2016				72.5	49		35.4		
1/25/2017	44.6	6.87	6.58						
1/27/2017									68.6
1/31/2017				70.3	46.6	63.6	34.2	19.1	
5/23/2017		7.13	6.4			111		18.3	32
5/24/2017	34.8			75.9	49.5		35.3		
8/10/2017	48.6	6.71	6.54	84	54.2	81.2	43.1	20.9	78.9
11/13/2017	17.1		6.26						
11/14/2017		7.4		87.2	53.2	79.7	37.4	21.7	46.9
6/4/2018	30.1		7.4						
6/5/2018		7.4							
6/6/2018				81	55	88.3	41.1	17	
6/7/2018									37.7
10/1/2018	14.2 (J)	6.2	5.8						
10/2/2018				84.7	55.4		42.5		
10/3/2018						85.3		19.1 (J)	68
4/1/2019	58.4								
4/2/2019		7.4	6.7						
4/3/2019					54		37.5		
4/4/2019				73.8		91.9		16.9	
4/5/2019									70
6/17/2019				81.2	55.3	92.6			
6/18/2019									36.3
10/21/2019	51								
10/22/2019		7.2	6.3		58.1		42.6		70.9
10/23/2019				89.4		86.5		21.9	
1/3/2020									
3/4/2020									
3/24/2020	61.2		7						68
3/25/2020				91.4	59.5	86.8	42.6	18.4	
4/9/2020		8.3							
6/18/2020									
7/21/2020									
8/27/2020									
9/18/2020	32.2		6.5						
9/22/2020		7.9							
9/24/2020				92.9	55.4	91.3		20.3	
9/25/2020							48.5		72.8
9/28/2020									
11/10/2020									
11/11/2020									
12/15/2020									

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-118	HGWC-102	HGWA-48D (bg)	HGWA-47 (bg)
8/30/2016				
8/31/2016	79.3			
10/20/2016	83.7			
10/24/2016				
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	76.8			
5/23/2017	77.2			
5/24/2017				
8/10/2017	83.1			
11/13/2017				
11/14/2017	86.7			
6/4/2018				
6/5/2018				
6/6/2018				
6/7/2018	79.7			
10/1/2018				
10/2/2018				
10/3/2018	77.1			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019				
4/5/2019	82			
6/17/2019				
6/18/2019	76.5			
10/21/2019				
10/22/2019	84.2			
10/23/2019		136		
1/3/2020		118		
3/4/2020		144		
3/24/2020		103		
3/25/2020	86.8			
4/9/2020				
6/18/2020		124		
7/21/2020		120		
8/27/2020		106		
9/18/2020			51.8	62.2
9/22/2020				
9/24/2020		120		
9/25/2020				
9/28/2020	88.9			
11/10/2020				73.3
11/11/2020			61.3	
12/15/2020			61.3	72.5

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-113 (bg)	HGWA-112 (bg)	HGWC-105	HGWC-101	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/30/2016	3.3	2	5.4						
8/31/2016				3	5.7	3.2	5	7.1	4.5
10/20/2016	3.2				5.7			7.7	4.4
10/24/2016		1.9	5.2						
10/25/2016				2.8		3.2	4.8		
1/25/2017	2.7	1.9	5						
1/27/2017								7.8	
1/31/2017				3.3	5.8	3.1	5.5		4.8
5/23/2017		1.6	5.1		5.3			3.6	4.3
5/24/2017	3			3.5		2.9	5.3		
8/10/2017	2.8	1.7	5.2	2.9	5.4	2.8	4.6	5.9	4.2
11/13/2017	2.5		5.5						
11/14/2017		2		4	5.8	3.4	5.6	4	4.4
6/4/2018	2.6		5.3						
6/5/2018		1.7							
6/6/2018				2.9	5.3	2.8	5.3		
6/7/2018								3.6	4.1
10/1/2018	2.2	1.6	5.6						
10/2/2018				3.5		3.2	5.3		
10/3/2018					5.8			7.6	4.4
4/1/2019	4								
4/2/2019		1.8	5.7						
4/3/2019						3.6	5		
4/4/2019				3.9	5.9				
4/5/2019								8.9	4.3
6/17/2019						2.9			
10/21/2019	3.9								
10/22/2019		1.9	5.5			3.6	4.6	12.1	4.5
10/23/2019				3.6	5.5				
1/3/2020									
3/4/2020									
3/24/2020	3.6		5.2					12.5	
3/25/2020				3.2	5.2	3	3.9		3.6
4/9/2020		1.4							
6/18/2020									
7/21/2020									
8/27/2020									
9/18/2020	2.6		5.2						
9/22/2020		1.5							
9/24/2020				3.9	5.5	3.5			
9/25/2020							4.1	16.1	
9/28/2020									4
11/10/2020									
11/11/2020									
12/15/2020									

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-102	HGWA-47 (bg)	HGWA-48D (bg)
8/30/2016				
8/31/2016	5.2			
10/20/2016				
10/24/2016	5.2			
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	5.6			
5/23/2017	5.7			
5/24/2017				
8/10/2017	5.8			
11/13/2017				
11/14/2017	6			
6/4/2018				
6/5/2018				
6/6/2018	6.4			
6/7/2018				
10/1/2018				
10/2/2018				
10/3/2018	6.3			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019	6.9			
4/5/2019				
6/17/2019	5.2			
10/21/2019				
10/22/2019				
10/23/2019	6.1	7.9		
1/3/2020		7		
3/4/2020		7.1		
3/24/2020		6.5		
3/25/2020	5.1			
4/9/2020				
6/18/2020		6.9		
7/21/2020		7.2		
8/27/2020		7.1		
9/18/2020			2.7	2.6
9/22/2020				
9/24/2020	6	7.2		
9/25/2020				
9/28/2020				
11/10/2020			2.7	
11/11/2020				2.6
12/15/2020			2.9	2.7

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-113 (bg)	HGWA-112 (bg)	HGWC-103	HGWC-107	HGWC-101	HGWC-109	HGWC-117	HGWC-118
8/30/2016	0.07 (J)	0.2 (J)	0.04 (J)						
8/31/2016				0.06 (J)	0.08 (J)	0.05 (J)	0.12 (J)	0.09 (J)	0.18 (J)
10/20/2016	0.07 (J)					0.03 (J)		0.11 (J)	0.12 (J)
10/24/2016		0.16 (J)	0.05 (J)	0.13 (J)					
10/25/2016					0.16 (J)		0.17 (J)		
1/25/2017	0.14 (J)	0.15 (J)	<0.1						
1/27/2017								0.28 (J)	
1/31/2017				<0.1	0.16 (J)	<0.1	0.05 (J)		0.3
5/23/2017		0.18 (J)	0.004 (J)	0.15 (J)		<0.1		0.01 (J)	0.14 (J)
5/24/2017	0.02 (J)				0.009 (J)		0.13 (J)		
8/10/2017	0.06 (J)	0.19 (J)	0.03 (J)	<0.1	<0.1	<0.1	0.12 (J)	0.1 (J)	0.11 (J)
11/13/2017	<0.1		<0.1						
11/14/2017		0.16 (J)		<0.1	<0.1	<0.1	<0.1	<0.1	0.07 (J)
6/4/2018	0.032 (J)		<0.1						
6/5/2018		0.18 (J)							
6/6/2018				<0.1	0.057 (J)	<0.1	0.15 (J)		
6/7/2018								<0.1	0.3
10/1/2018	<0.1	0.078 (J)	<0.1						
10/2/2018					<0.1		<0.1		
10/3/2018				<0.1		<0.1		<0.1	0.12 (J)
4/1/2019	0.042 (J)								
4/2/2019		0.18 (J)	<0.1						
4/3/2019					<0.1		0.05 (J)		
4/4/2019				0.042 (J)		<0.1			
4/5/2019								0.19 (J)	0.33
6/18/2019									0.89
8/21/2019	0.048 (J)	0.11 (J)	<0.1						
8/22/2019				<0.1		<0.1		<0.1	0.07 (J)
8/23/2019					<0.1		0.034 (J)		
10/21/2019	0.12 (J)								
10/22/2019		0.18 (J)	0.05 (J)		0.047 (J)		0.099 (J)	0.042 (J)	0.087 (J)
10/23/2019				<0.1		<0.1			
1/3/2020									
3/4/2020									
3/24/2020	0.076 (J)		<0.1					<0.1	
3/25/2020				<0.1	<0.1	<0.1	0.075 (J)		0.078 (J)
4/9/2020		0.14 (J)							
6/18/2020									
7/21/2020									
8/25/2020	0.052 (J)	0.17	<0.1						
8/26/2020									0.072 (J)
8/27/2020				<0.1	<0.1	<0.1	0.094 (J)	<0.1	
9/18/2020	<0.1		<0.1						
9/22/2020		0.16							
9/24/2020				<0.1	0.064 (J)	<0.1			
9/25/2020							0.091 (J)	<0.1	
9/28/2020									0.078 (J)
11/10/2020									
11/11/2020									
12/15/2020									

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-105	HGWC-102	HGWA-48D (bg)	HGWA-47 (bg)
8/30/2016				
8/31/2016	0.15 (J)			
10/20/2016				
10/24/2016				
10/25/2016	0.09 (J)			
1/25/2017				
1/27/2017				
1/31/2017	0.13 (J)			
5/23/2017				
5/24/2017	0.07 (J)			
8/10/2017	0.03 (J)			
11/13/2017				
11/14/2017	<0.1			
6/4/2018				
6/5/2018				
6/6/2018	0.074 (J)			
6/7/2018				
10/1/2018				
10/2/2018	<0.1			
10/3/2018				
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019	0.03 (J)			
4/5/2019				
6/18/2019				
8/21/2019				
8/22/2019	<0.1			
8/23/2019				
10/21/2019				
10/22/2019				
10/23/2019	<0.1	0.22 (J)		
1/3/2020		<0.1		
3/4/2020		<0.1		
3/24/2020		<0.1		
3/25/2020	<0.1			
4/9/2020				
6/18/2020		<0.1		
7/21/2020		<0.1		
8/25/2020				
8/26/2020				
8/27/2020	<0.1	<0.1		
9/18/2020			0.098 (J)	0.067 (J)
9/22/2020				
9/24/2020	<0.1	<0.1		
9/25/2020				
9/28/2020				
11/10/2020				0.065 (J)
11/11/2020			0.083 (J)	
12/15/2020			0.081 (J)	0.064 (J)

Prediction Limit

Constituent: pH (s.u.) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-113 (bg)	HGWA-112 (bg)	HGWC-105	HGWC-101	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/30/2016	6.89	5.99	5.77						
8/31/2016				6.5	5.35	6.11	6.78	6.07	7.03
10/20/2016	6.73				5.3			6	7.01
10/24/2016		5.84	5.61						
10/25/2016				6.34		6.04	6.55		
1/25/2017	7.02	6.04	5.68						
1/27/2017								6.2	
1/31/2017				6.43	5.24	5.94	6.5		6.96
5/23/2017		6.01	5.7		5.39			5.27	6.92
5/24/2017	6.44			6.31		6.06	6.42		
8/10/2017	6.79	5.98	5.59	6.45	5.47	6.06	6.63	6.27	6.99
11/13/2017	5.94		5.56						
11/14/2017		6.16		6.53	5.4	5.99	6.5	5.4	6.9
6/4/2018	6.12		5.62						
6/5/2018		5.86							
6/6/2018				6.49	5.37	6	6.59		
6/7/2018								5.29	7.03
10/1/2018	5.92	5.94	5.62						
10/2/2018				6.18		6.18	6.54		
10/3/2018					5.39			6.08	7.08
4/1/2019	7.09								
4/2/2019		6	5.47						
4/3/2019						6.06	6.42		
4/4/2019				6.17	5.31				
4/5/2019								5.99	6.96
6/17/2019									
6/18/2019					5.3				
8/21/2019	6.6	6.05	5.8						
8/22/2019				6.04	5.39			5.53	6.93
8/23/2019						6.26	6.76		
10/21/2019	7.02								
10/22/2019		5.98	5.7			6.19	6.58	6.17	7.03
10/23/2019				6.46	5.33				
1/3/2020									
3/4/2020									
3/24/2020	7.37		5.64					5.99	
3/25/2020				6.47	5.53	6.13	6.56		6.89
4/9/2020		6.08							
6/18/2020									
7/21/2020									
8/25/2020	6.7	5.95	5.53						
8/26/2020									6.97
8/27/2020				6.45	5.32	6.09	6.64	5.92	
9/18/2020	6.46		5.58						
9/22/2020		6.1							
9/24/2020				6.63	5.48	6.11			
9/25/2020							6.79	6.01	
9/28/2020									7.03
11/10/2020									
11/11/2020									
12/15/2020									

Prediction Limit

Constituent: pH (s.u.) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-103	HGWC-102	HGWA-48D (bg)	HGWA-47 (bg)
8/30/2016				
8/31/2016	5.54			
10/20/2016				
10/24/2016	5.48			
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	5.51			
5/23/2017	5.98			
5/24/2017				
8/10/2017	5.63			
11/13/2017				
11/14/2017	5.59			
6/4/2018				
6/5/2018				
6/6/2018	5.49			
6/7/2018				
10/1/2018				
10/2/2018				
10/3/2018	5.53			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019	5.44			
4/5/2019				
6/17/2019	5.53			
6/18/2019				
8/21/2019				
8/22/2019	5.55			
8/23/2019				
10/21/2019				
10/22/2019				
10/23/2019	5.49	5.68		
1/3/2020		5.64		
3/4/2020		5.75		
3/24/2020		5.58		
3/25/2020	5.49			
4/9/2020				
6/18/2020		5.67		
7/21/2020		5.72		
8/25/2020				
8/26/2020				
8/27/2020	5.82	5.7		
9/18/2020			7.5	7.54
9/22/2020				
9/24/2020	5.6	5.82		
9/25/2020				
9/28/2020				
11/10/2020				7.34
11/11/2020			7.4	
12/15/2020			7.39	7.27

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-113 (bg)	HGWA-112 (bg)	HGWC-103	HGWC-107	HGWC-109	HGWC-101	HGWC-117	HGWC-105
8/30/2016	1.6	14	0.63 (J)						
8/31/2016				280	130	36	110	150	190
10/20/2016	1.6						110	150	
10/24/2016		11	0.62 (J)	280					
10/25/2016					130	41			190
1/25/2017	1.6	12	0.62 (J)						
1/27/2017								150	
1/31/2017				300	130	37	120		210
5/23/2017		12	0.55 (J)	340			97	110	
5/24/2017	1.4				130	40			180
8/10/2017	1.6	11	0.66 (J)	300	130	40	96	140	180
11/13/2017	1.3		0.61 (J)						
11/14/2017		11		310	130	40	110	110	170
6/4/2018	1.4		0.73 (J)						
6/5/2018		9.9							
6/6/2018				351	132	49.7	95.5		168
6/7/2018								103	
10/1/2018	1	6.7	0.52 (J)						
10/2/2018					132	42.3			173
10/3/2018				381			121	169	
4/1/2019	1.7								
4/2/2019		8.7	0.78 (J)						
4/3/2019					139	36			
4/4/2019				358			95.1		185
4/5/2019								141	
6/17/2019				311	126	30.9			162
6/18/2019							102	116	
10/21/2019	1.8								
10/22/2019		6.8	0.6 (J)		123	23.2		133	
10/23/2019				248			101		162
1/3/2020									
3/4/2020									
3/24/2020	1.6		<1					129	
3/25/2020				251	116	27.9	85.5		161
4/9/2020		6.6							
6/18/2020									
7/21/2020									
8/27/2020									
9/18/2020	1		<1						
9/22/2020		5.3							
9/24/2020				293	126		97		177
9/25/2020						24.7		146	
9/28/2020									
11/10/2020									
11/11/2020									
12/15/2020									

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-118	HGWC-102	HGWA-47 (bg)	HGWA-48D (bg)
8/30/2016				
8/31/2016	88			
10/20/2016	81			
10/24/2016				
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	87			
5/23/2017	84			
5/24/2017				
8/10/2017	78			
11/13/2017				
11/14/2017	79			
6/4/2018				
6/5/2018				
6/6/2018				
6/7/2018	60.1			
10/1/2018				
10/2/2018				
10/3/2018	91.5			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019				
4/5/2019	75.1			
6/17/2019				
6/18/2019	77			
10/21/2019				
10/22/2019	80.9			
10/23/2019		<1		
1/3/2020		380		
3/4/2020		400		
3/24/2020		311		
3/25/2020	78.4			
4/9/2020				
6/18/2020		349		
7/21/2020		378		
8/27/2020		382		
9/18/2020			3.5	9.5
9/22/2020				
9/24/2020		370		
9/25/2020				
9/28/2020	86			
11/10/2020			2.3	
11/11/2020				4.5
12/15/2020			2.4	4.2

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-113 (bg)	HGWA-112 (bg)	HGWC-105	HGWC-107	HGWC-103	HGWC-109	HGWC-101	HGWC-118
8/30/2016	172	77	76						
8/31/2016				389	235	483	182	278	373
10/20/2016	108							165	305
10/24/2016		111	65			517			
10/25/2016				316	223		172		
1/25/2017	345	155	152 (o)						
1/27/2017									
1/31/2017				437	346	516	252	263	361
5/23/2017		74	52			637		190	359
5/24/2017	126			352	234		184		
8/10/2017	174	94	60	356	254	459	208	175	325
11/13/2017	158		75						
11/14/2017		89		375	313	545	252	253	373
6/4/2018	131		70						
6/5/2018		92							
6/6/2018				385	278	559	224	188	
6/7/2018									338
10/1/2018	101	91	76						
10/2/2018				374	274		230		
10/3/2018						582		238	328
4/1/2019	213								
4/2/2019		94	69						
4/3/2019					273		210		
4/4/2019				340		535		149	
4/5/2019									308
6/17/2019				370	272	515			
6/18/2019									215
10/21/2019	187								
10/22/2019		95	81		308		212		354
10/23/2019				419		507		221	
1/3/2020									
3/4/2020									
3/24/2020	207		52						
3/25/2020				417	297	507	213	187	347
4/9/2020		48							
6/18/2020									
7/21/2020									
8/27/2020									
9/18/2020	139		62						
9/22/2020		84							
9/24/2020				411	253	517		170	
9/25/2020							188		
9/28/2020									332
11/10/2020									
11/11/2020									
12/15/2020									

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/17/2021 2:50 PM View: Interwell PLs

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-117	HGWC-102	HGWA-48D (bg)	HGWA-47 (bg)
8/30/2016				
8/31/2016	381			
10/20/2016	319			
10/24/2016				
10/25/2016				
1/25/2017				
1/27/2017	407			
1/31/2017				
5/23/2017	258			
5/24/2017				
8/10/2017	359			
11/13/2017				
11/14/2017	310			
6/4/2018				
6/5/2018				
6/6/2018				
6/7/2018	223			
10/1/2018				
10/2/2018				
10/3/2018	337			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019				
4/5/2019	334			
6/17/2019				
6/18/2019	254			
10/21/2019				
10/22/2019	348			
10/23/2019		736		
1/3/2020		714		
3/4/2020		764		
3/24/2020	331	521		
3/25/2020				
4/9/2020				
6/18/2020		652		
7/21/2020		669		
8/27/2020		663		
9/18/2020			224	195
9/22/2020				
9/24/2020		696		
9/25/2020	340			
9/28/2020				
11/10/2020				229
11/11/2020			221	
12/15/2020			239	233

FIGURE E.

Trend Tests - Prediction Limit Exceedances - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 2:57 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**HGWC-107**	**0.04564**	**51**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	**HGWC-105**	**4.827**	**48**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**HGWA-113 (bg)**	**-1.886**	**-54**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**HGWC-105**	**-7.78**	**-45**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests - Prediction Limit Exceedances - All Results

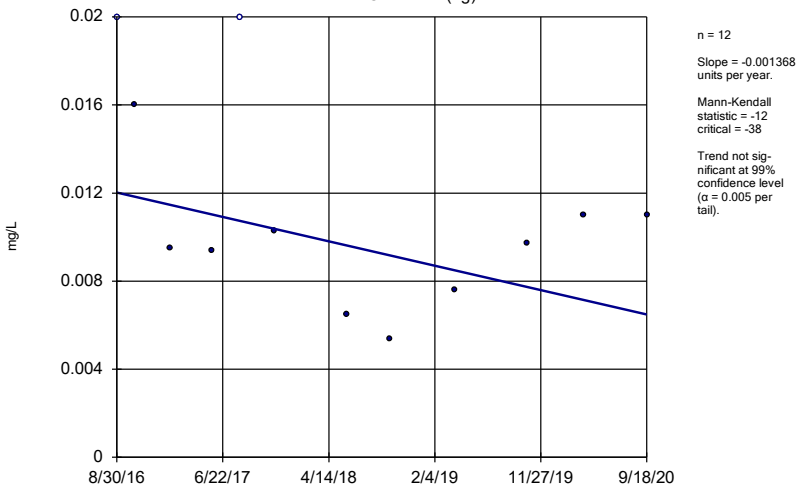
Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 2:57 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-111 (bg)	-0.001368	-12	-38	No	12	16.67	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-112 (bg)	-0.001715	-17	-38	No	12	25	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-113 (bg)	-0.001134	-9	-38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-101	0.002421	11	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-102	-0.517	-9	-21	No	8	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-103	0.00835	6	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-105	0.01191	9	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	**HGWC-107**	**0.04564**	**51**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	HGWC-109	-0.01598	-32	-43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-117	0.06364	30	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-118	-0.01732	-15	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-111 (bg)	2.597	6	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-112 (bg)	0.01309	4	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-113 (bg)	0.3543	33	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-102	-18.4	-7	-21	No	8	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-103	4.885	36	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	**HGWC-105**	**4.827**	**48**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	HGWC-118	1.704	24	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-111 (bg)	-0.09705	-7	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-112 (bg)	0.05844	15	38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-113 (bg)	-0.09485	-28	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-102	0.077	2	21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-103	0.2451	22	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-117	1.765	31	38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-111 (bg)	0	-8	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-112 (bg)	-0.0171	-22	-38	No	12	16.67	n/a	n/a	0.01	NP
Sulfate (mg/L)	**HGWA-113 (bg)**	**-1.886**	**-54**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	HGWC-101	-3.62	-28	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-102	97.63	6	21	No	8	12.5	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-103	3.256	6	43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**HGWC-105**	**-7.78**	**-45**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	HGWC-107	-0.4916	-17	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-109	-3.13	-30	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-117	-3.325	-12	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-118	-1.393	-16	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-111 (bg)	4.343	6	38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-112 (bg)	0	-1	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-113 (bg)	-3.149	-9	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-102	-68.87	-6	-21	No	8	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-103	-0.5883	-4	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-105	14.15	16	43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-117	-6.012	-10	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-118	-7.987	-19	-43	No	13	0	n/a	n/a	0.01	NP

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-111 (bg)



n = 12

Slope = -0.001368 units per year.

Mann-Kendall statistic = -12
critical = -38

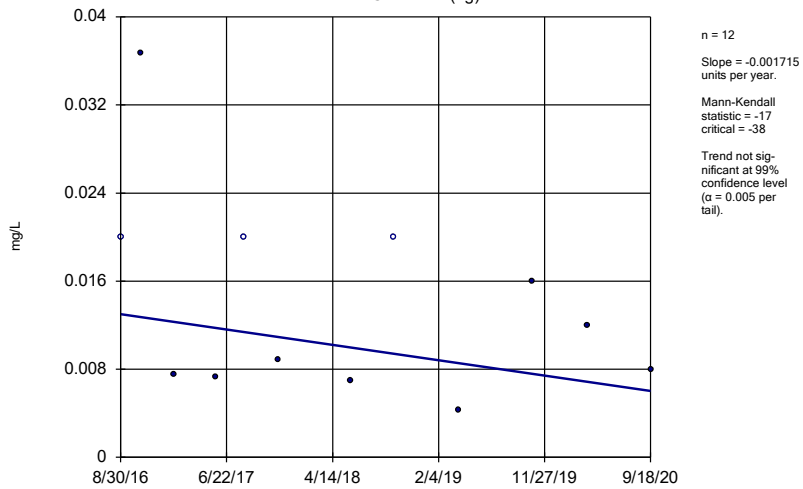
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-112 (bg)



n = 12

Slope = -0.001715 units per year.

Mann-Kendall statistic = -17
critical = -38

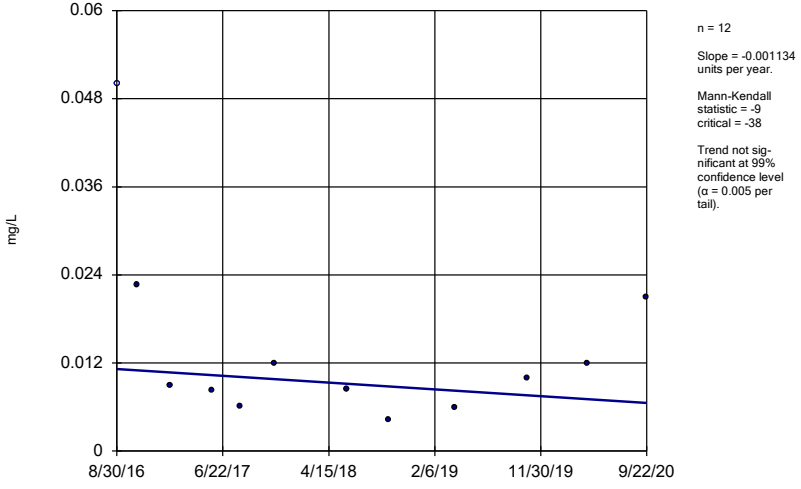
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-113 (bg)



n = 12

Slope = -0.001134 units per year.

Mann-Kendall statistic = -9
critical = -38

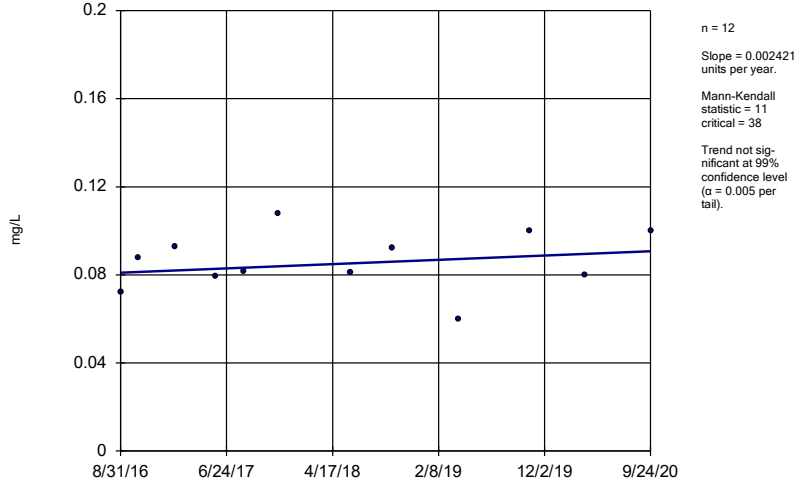
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-101



n = 12

Slope = 0.002421 units per year.

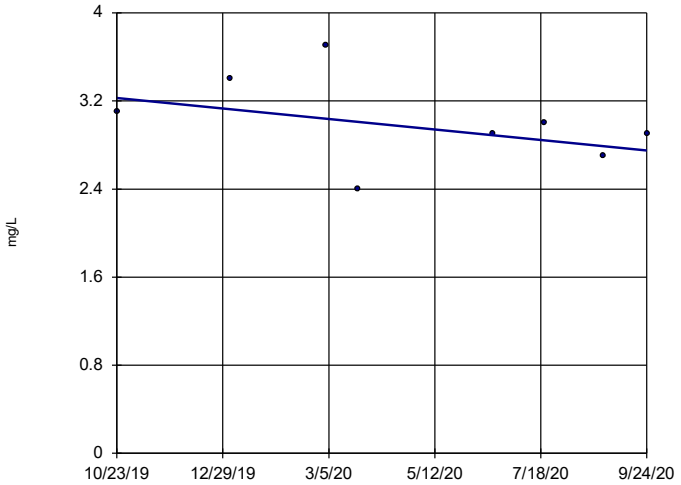
Mann-Kendall statistic = 11
critical = 38

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-102



n = 8

Slope = -0.517 units per year.

Mann-Kendall statistic = -9 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

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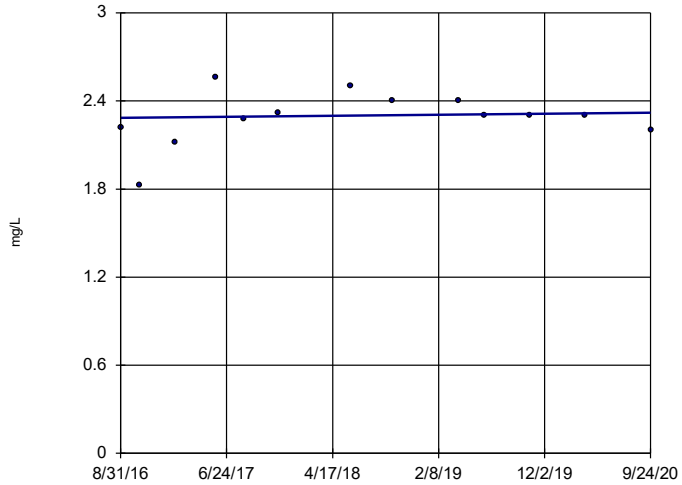
Sen's Slope Estimator

HGWC-103



n = 13

Slope = 0.00835 units per year.

Mann-Kendall statistic = 6 critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

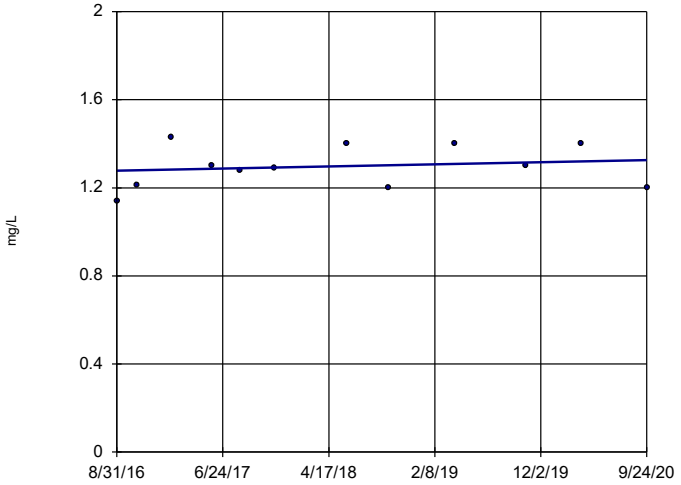
Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-105



n = 12

Slope = 0.01191 units per year.

Mann-Kendall statistic = 9 critical = 38

Trend not significant at 99% confidence level (α = 0.005 per tail).

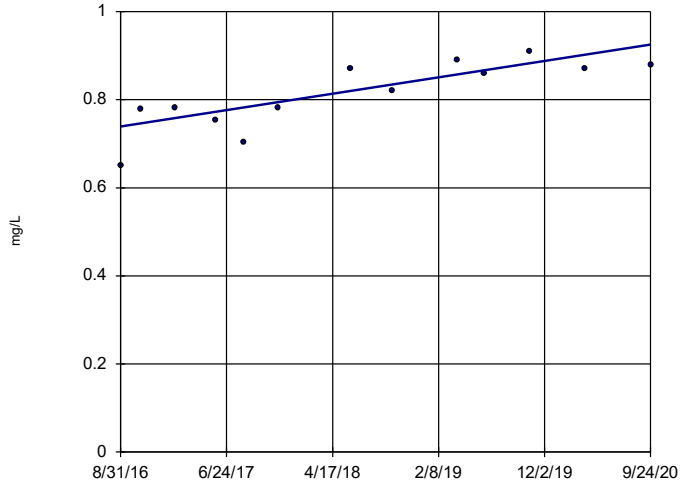
Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-107



n = 13

Slope = 0.04564 units per year.

Mann-Kendall statistic = 51 critical = 43

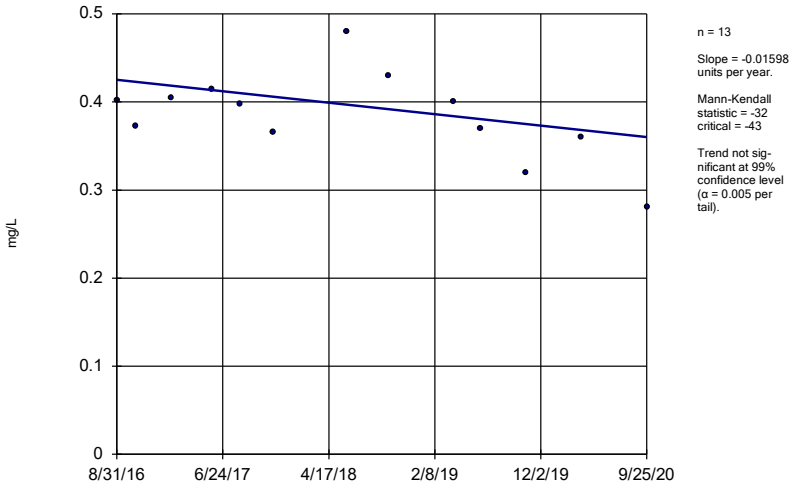
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-109



n = 13

Slope = -0.01598 units per year.

Mann-Kendall statistic = -32
critical = -43

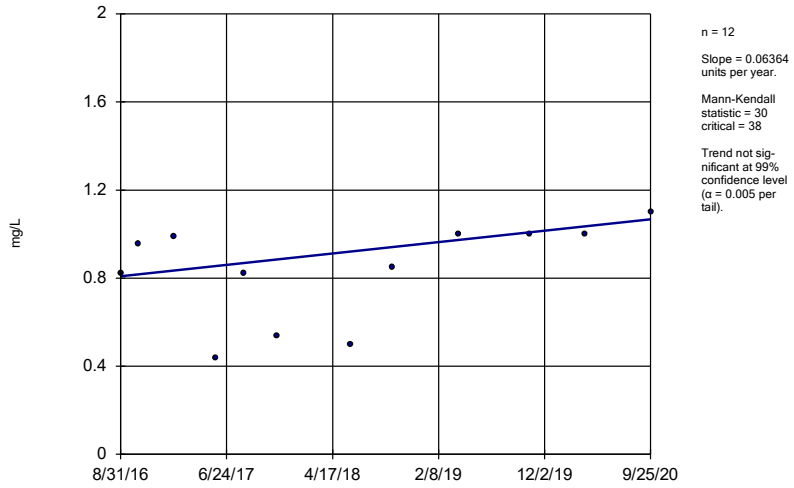
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-117



n = 12

Slope = 0.06364 units per year.

Mann-Kendall statistic = 30
critical = 38

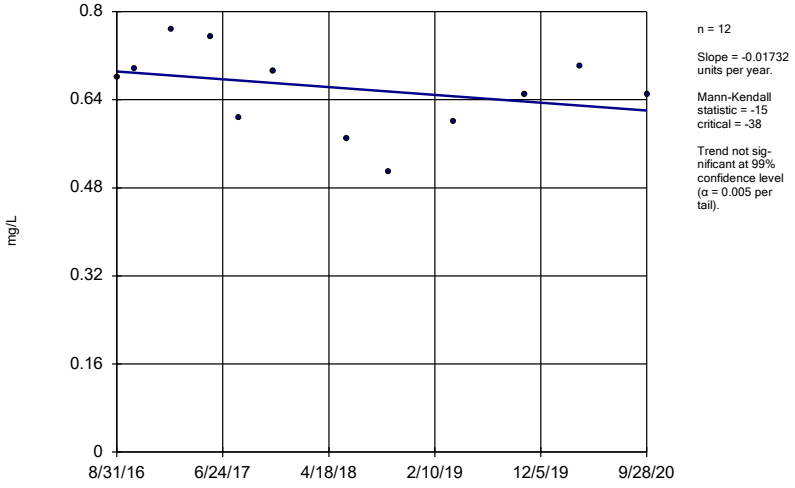
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-118



n = 12

Slope = -0.01732 units per year.

Mann-Kendall statistic = -15
critical = -38

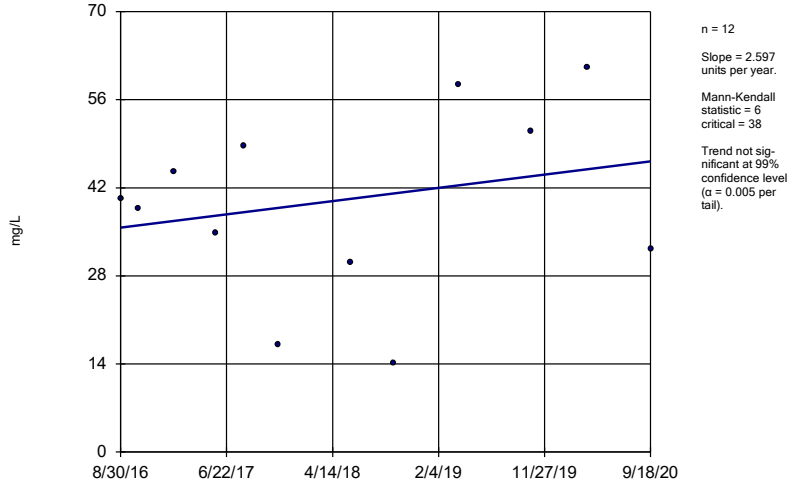
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/17/2021 2:54 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWA-111 (bg)



n = 12

Slope = 2.597 units per year.

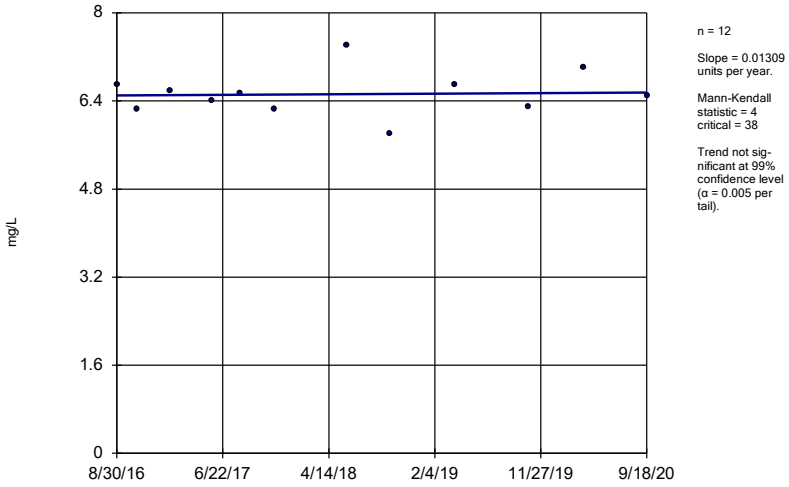
Mann-Kendall statistic = 6
critical = 38

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/17/2021 2:54 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-112 (bg)



n = 12

Slope = 0.01309 units per year.

Mann-Kendall statistic = 4 critical = 38

Trend not significant at 99% confidence level (α = 0.005 per tail).

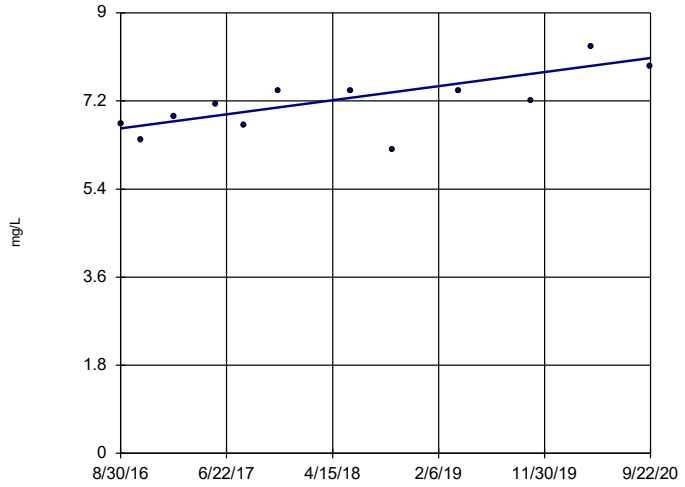
Constituent: Calcium Analysis Run 2/17/2021 2:54 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWA-113 (bg)



n = 12

Slope = 0.3543 units per year.

Mann-Kendall statistic = 33 critical = 38

Trend not significant at 99% confidence level (α = 0.005 per tail).

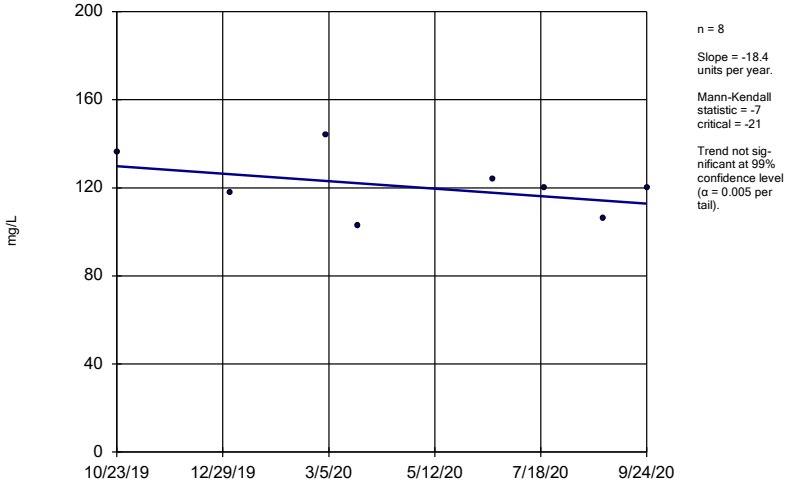
Constituent: Calcium Analysis Run 2/17/2021 2:54 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-102



n = 8

Slope = -18.4 units per year.

Mann-Kendall statistic = -7 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

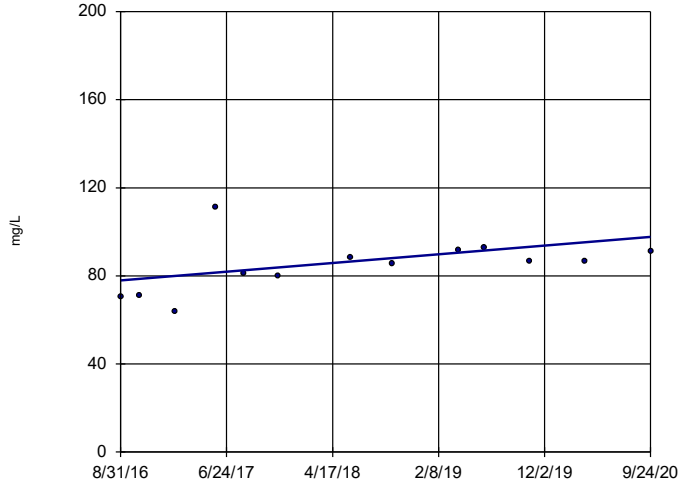
Constituent: Calcium Analysis Run 2/17/2021 2:54 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-103



n = 13

Slope = 4.885 units per year.

Mann-Kendall statistic = 36 critical = 43

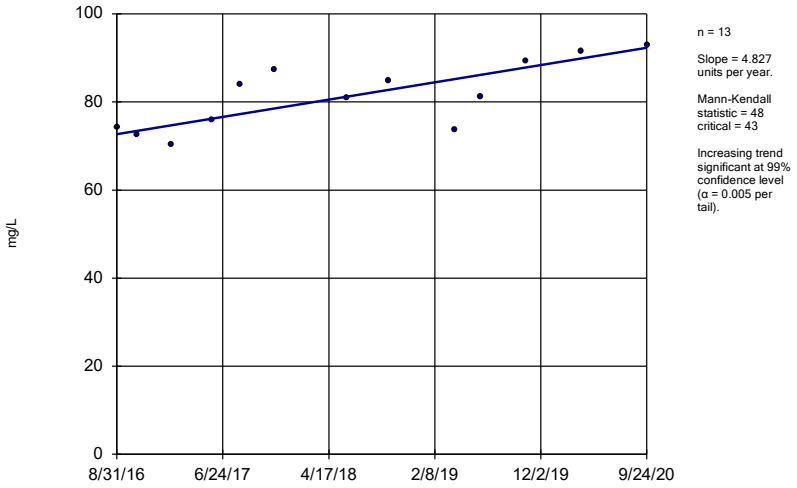
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-105



n = 13

Slope = 4.827 units per year.

Mann-Kendall statistic = 48
critical = 43

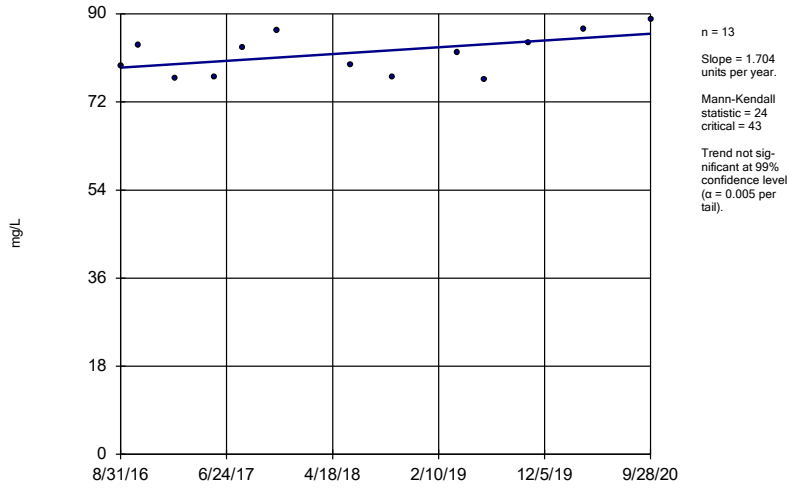
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/17/2021 2:55 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-118



n = 13

Slope = 1.704 units per year.

Mann-Kendall statistic = 24
critical = 43

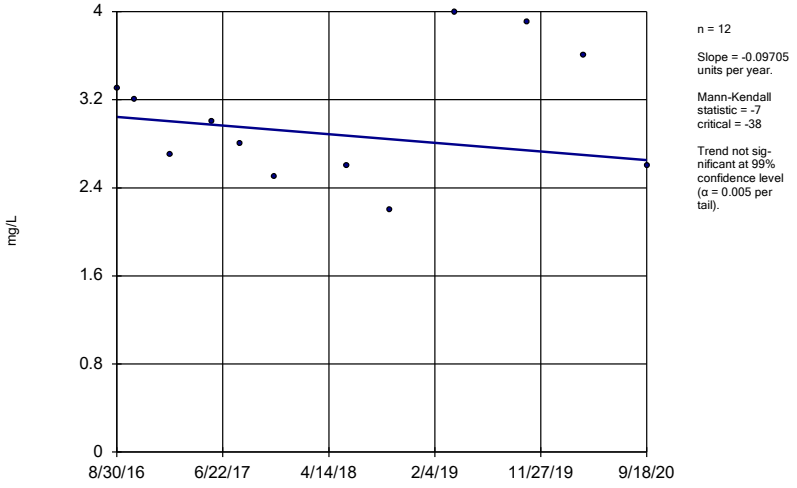
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/17/2021 2:55 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWA-111 (bg)



n = 12

Slope = -0.09705 units per year.

Mann-Kendall statistic = -7
critical = -38

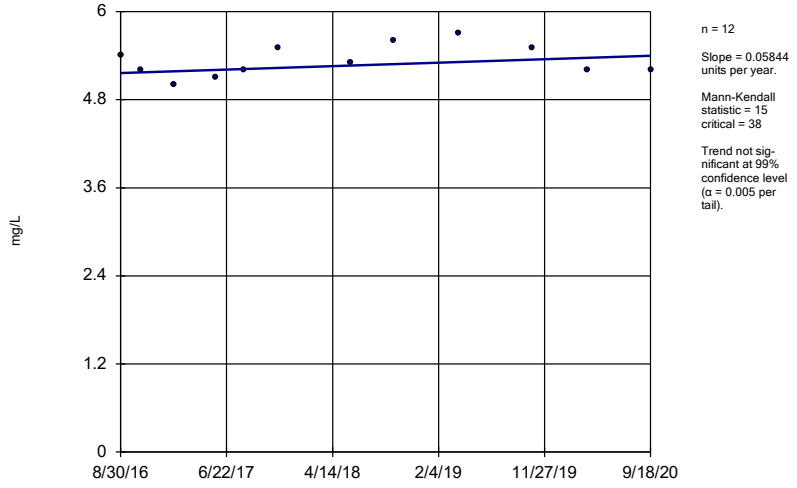
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 2/17/2021 2:55 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWA-112 (bg)



n = 12

Slope = 0.05844 units per year.

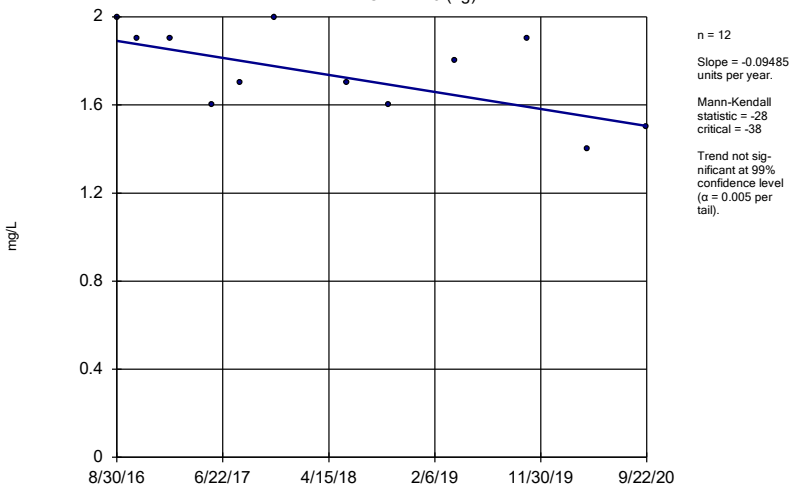
Mann-Kendall statistic = 15
critical = 38

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 2/17/2021 2:55 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-113 (bg)



n = 12

Slope = -0.09485 units per year.

Mann-Kendall statistic = -28 critical = -38

Trend not significant at 99% confidence level (α = 0.005 per tail).

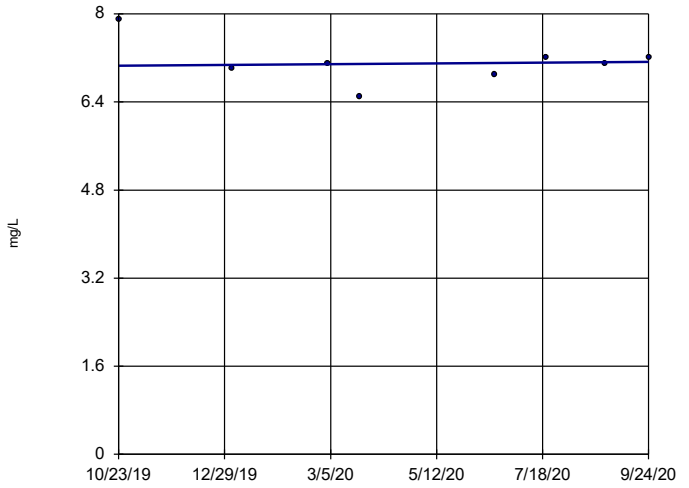
Constituent: Chloride Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-102



n = 8

Slope = 0.077 units per year.

Mann-Kendall statistic = 2 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

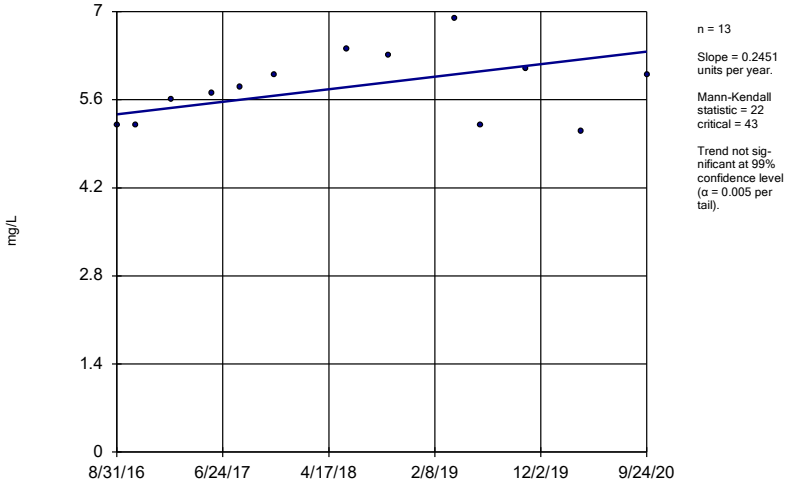
Constituent: Chloride Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-103



n = 13

Slope = 0.2451 units per year.

Mann-Kendall statistic = 22 critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

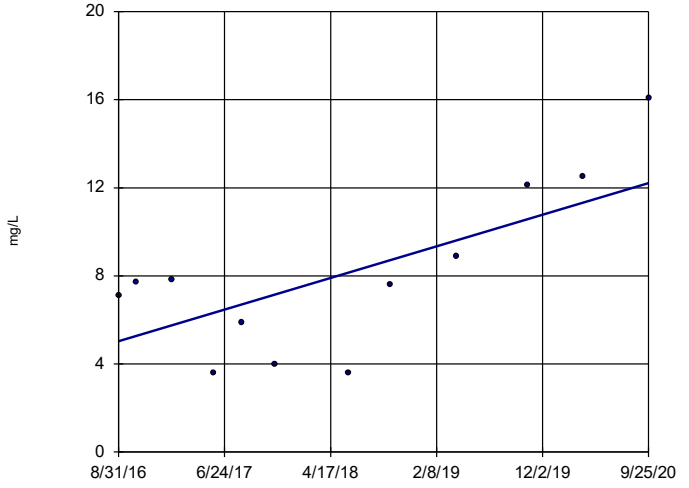
Constituent: Chloride Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-117



n = 12

Slope = 1.765 units per year.

Mann-Kendall statistic = 31 critical = 38

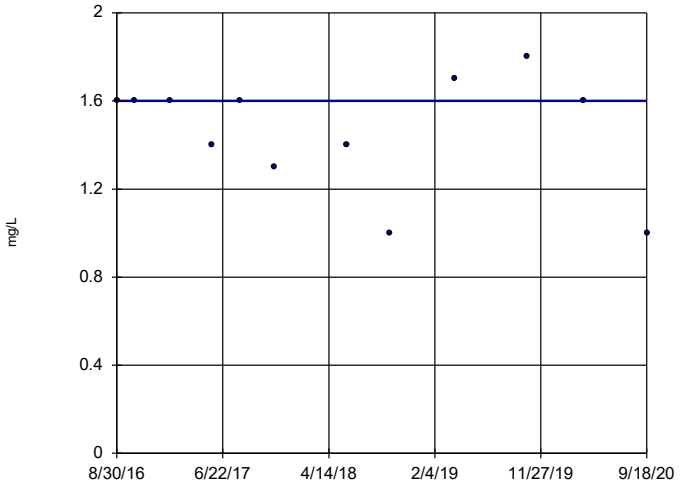
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-111 (bg)



n = 12

Slope = 0 units per year.

Mann-Kendall statistic = -8 critical = -38

Trend not significant at 99% confidence level (α = 0.005 per tail).

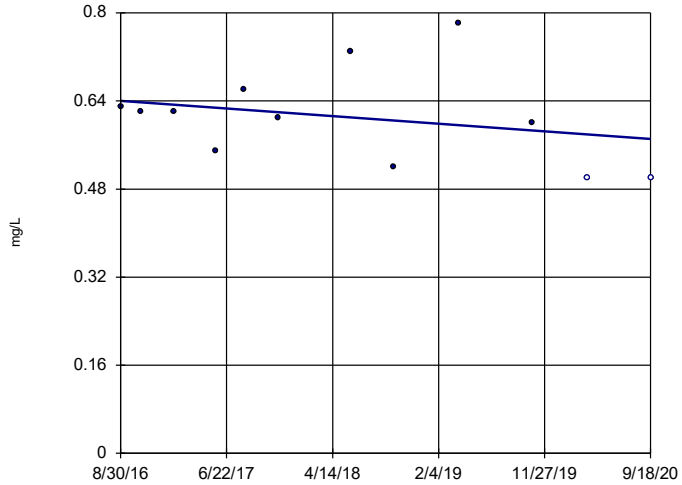
Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-112 (bg)



n = 12

Slope = -0.0171 units per year.

Mann-Kendall statistic = -22 critical = -38

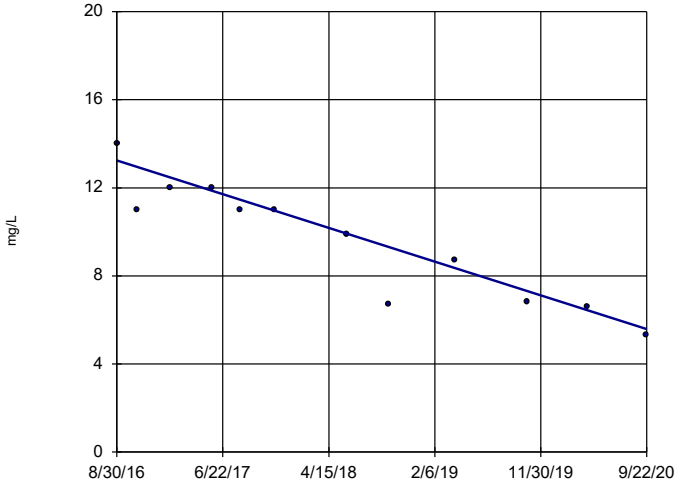
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-113 (bg)



n = 12

Slope = -1.886 units per year.

Mann-Kendall statistic = -54 critical = -38

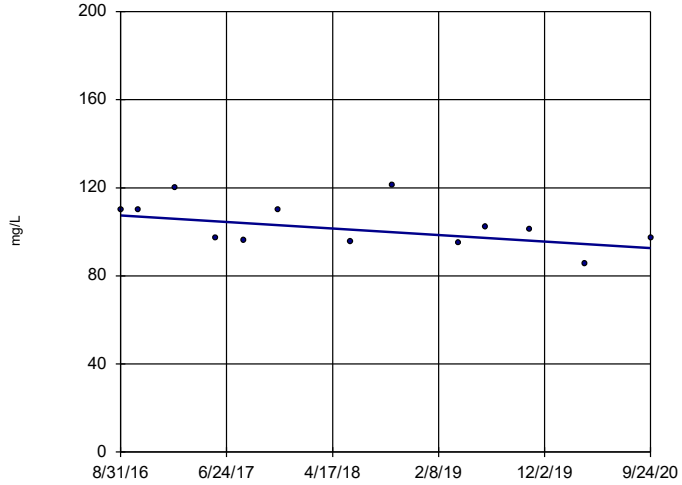
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-101



n = 13

Slope = -3.62 units per year.

Mann-Kendall statistic = -28 critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

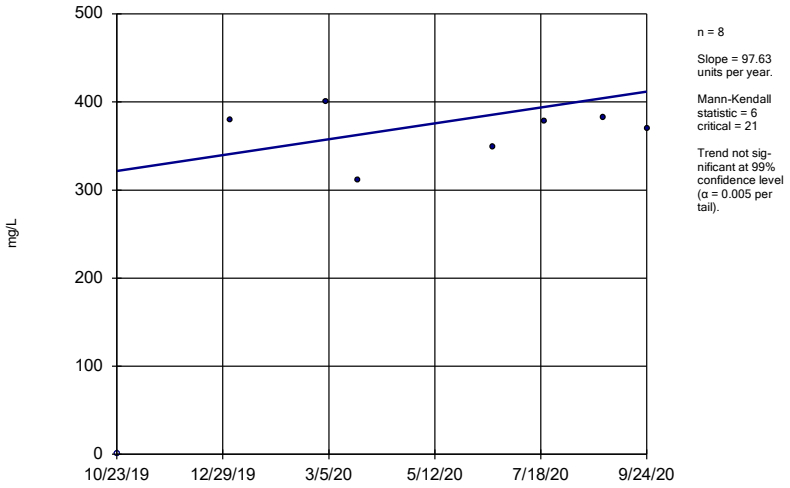
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWC-102



n = 8

Slope = 97.63 units per year.

Mann-Kendall statistic = 6 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

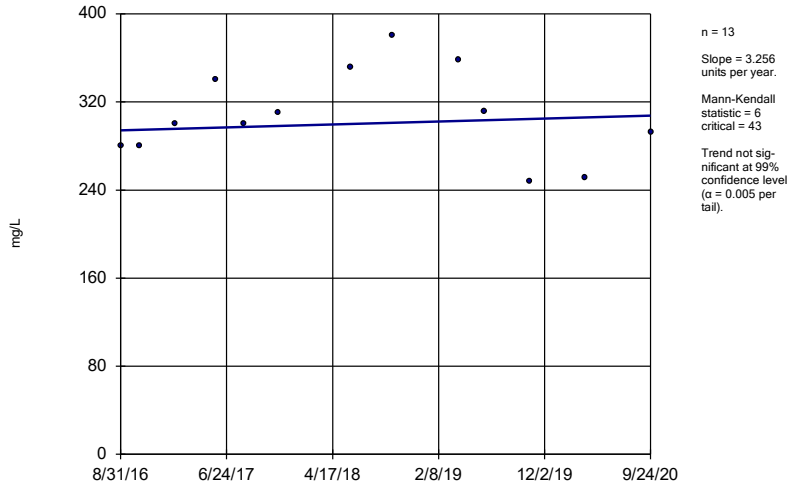
Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-103



n = 13

Slope = 3.256 units per year.

Mann-Kendall statistic = 6 critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

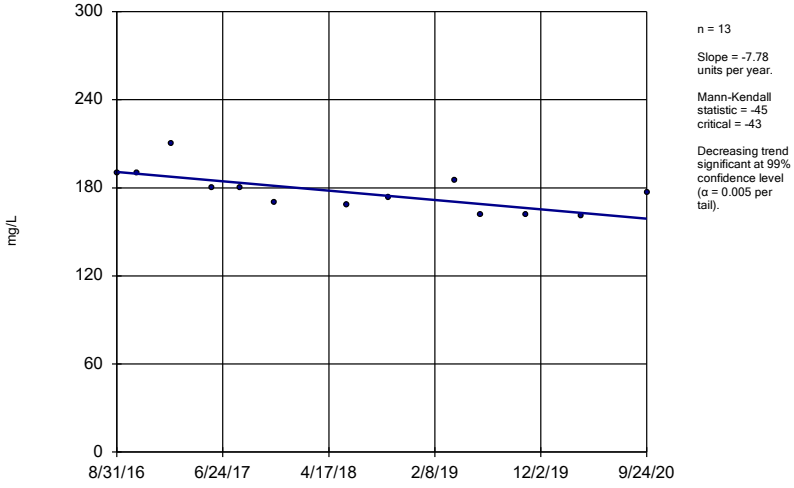
Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-105



n = 13

Slope = -7.78 units per year.

Mann-Kendall statistic = -45 critical = -43

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

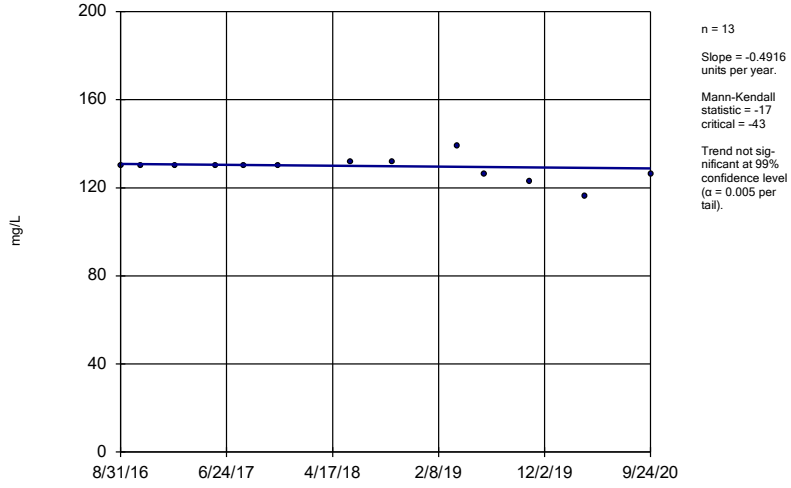
Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-107



n = 13

Slope = -0.4916 units per year.

Mann-Kendall statistic = -17 critical = -43

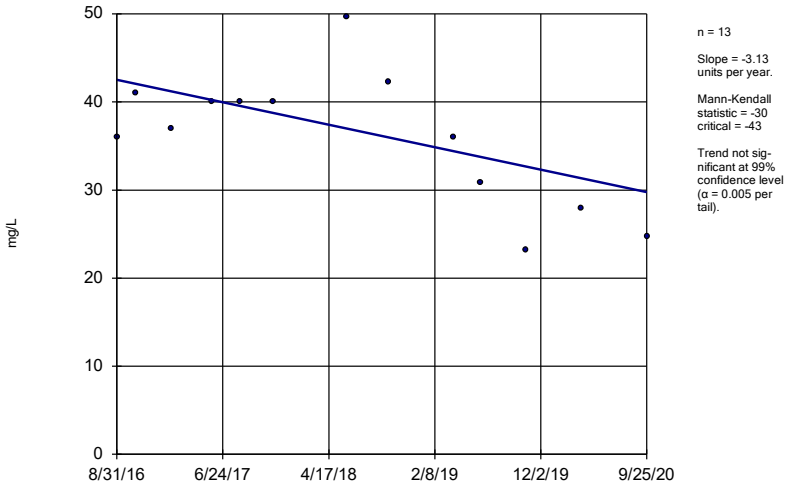
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-109



n = 13

Slope = -3.13 units per year.

Mann-Kendall statistic = -30 critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

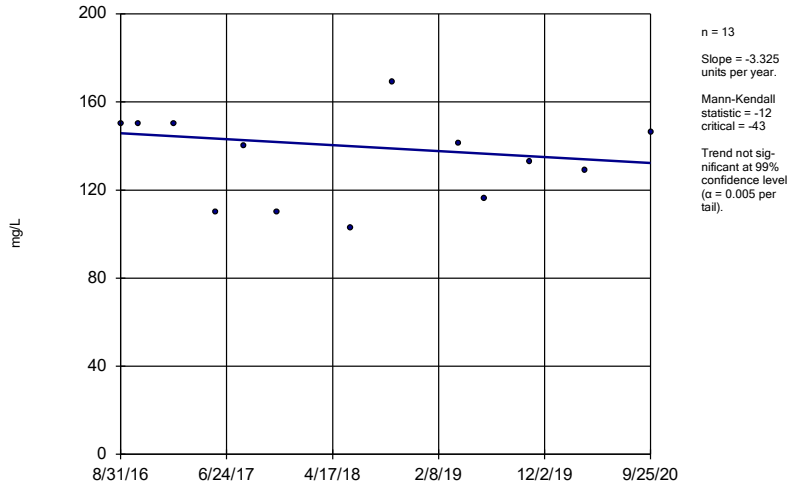
Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-117



n = 13

Slope = -3.325 units per year.

Mann-Kendall statistic = -12 critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

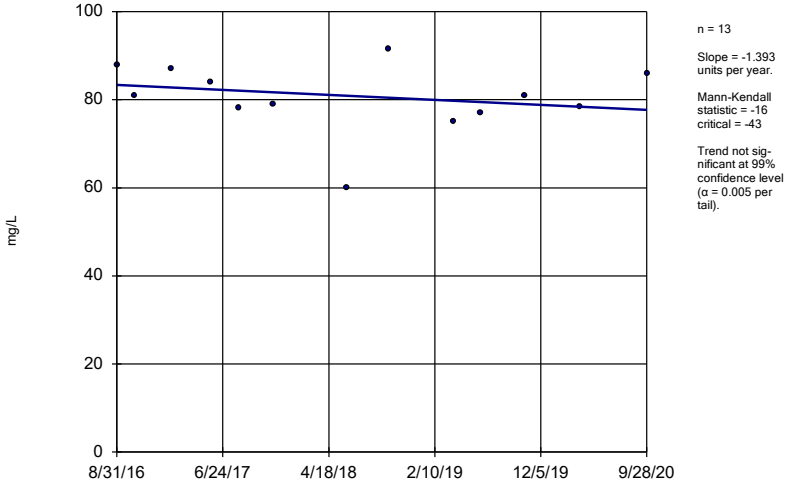
Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-118



n = 13

Slope = -1.393 units per year.

Mann-Kendall statistic = -16 critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

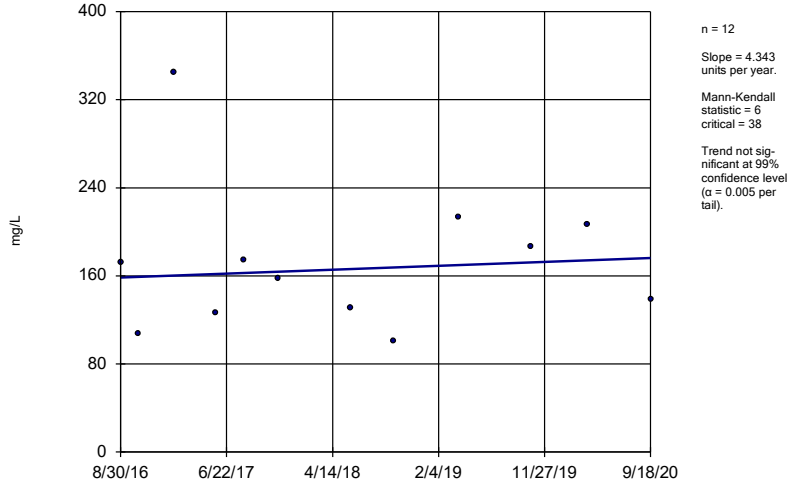
Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWA-111 (bg)



n = 12

Slope = 4.343 units per year.

Mann-Kendall statistic = 6 critical = 38

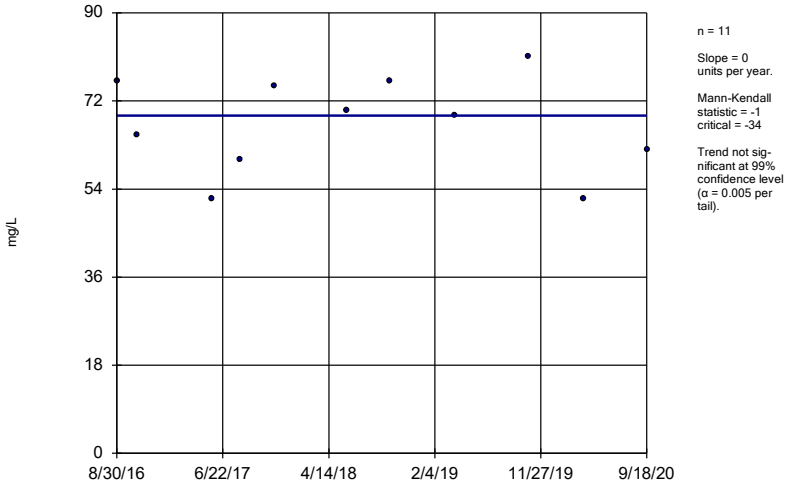
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-112 (bg)



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = -1
critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

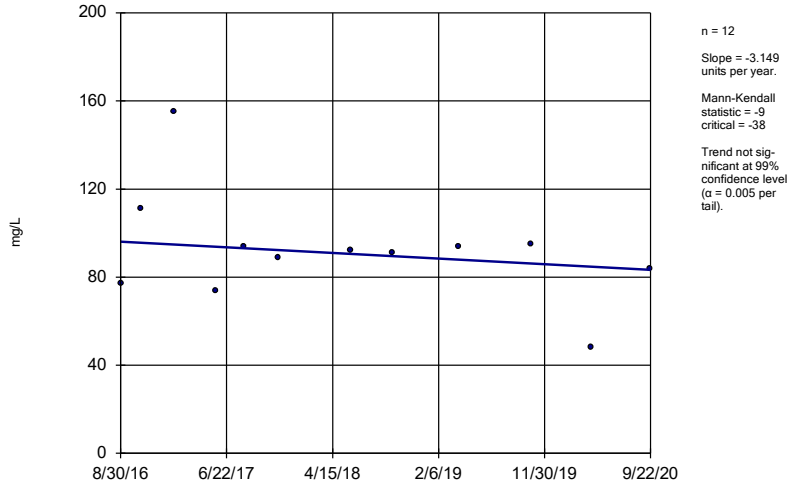
Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWA-113 (bg)



n = 12

Slope = -3.149 units per year.

Mann-Kendall statistic = -9
critical = -38

Trend not significant at 99% confidence level (α = 0.005 per tail).

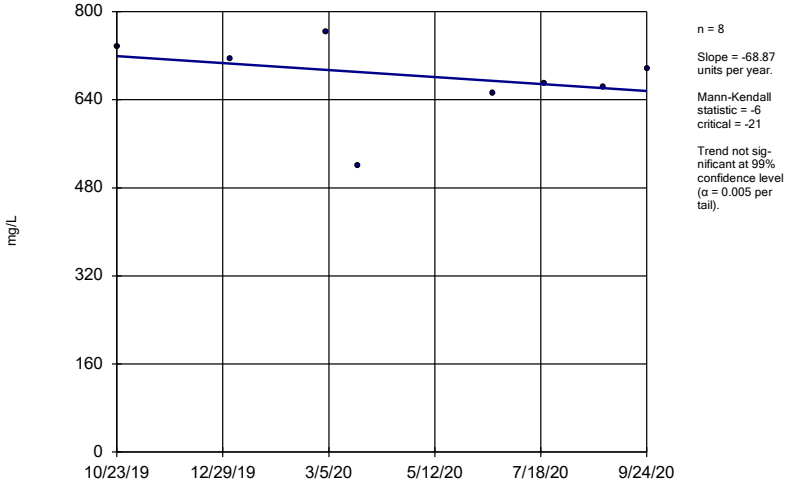
Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-102



n = 8

Slope = -68.87 units per year.

Mann-Kendall statistic = -6
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

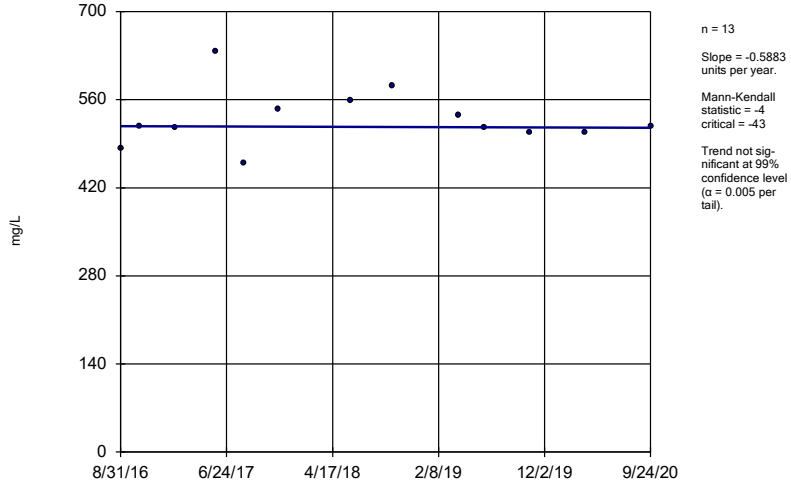
Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-103



n = 13

Slope = -0.5883 units per year.

Mann-Kendall statistic = -4
critical = -43

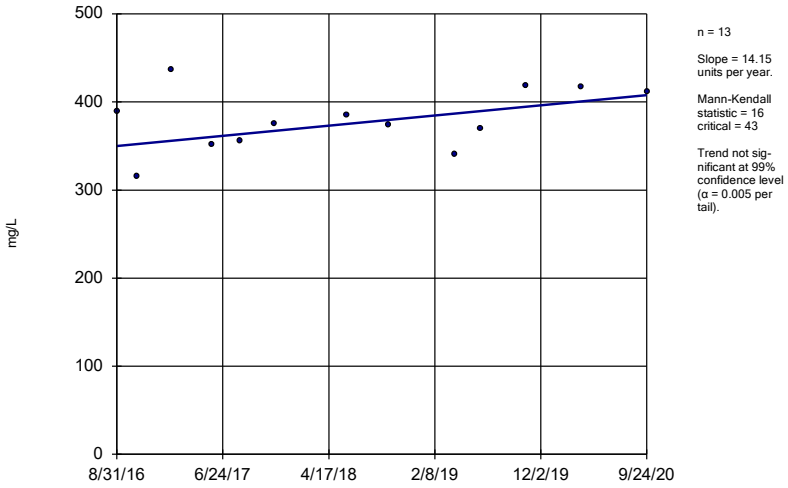
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-105



n = 13

Slope = 14.15 units per year.

Mann-Kendall statistic = 16 critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

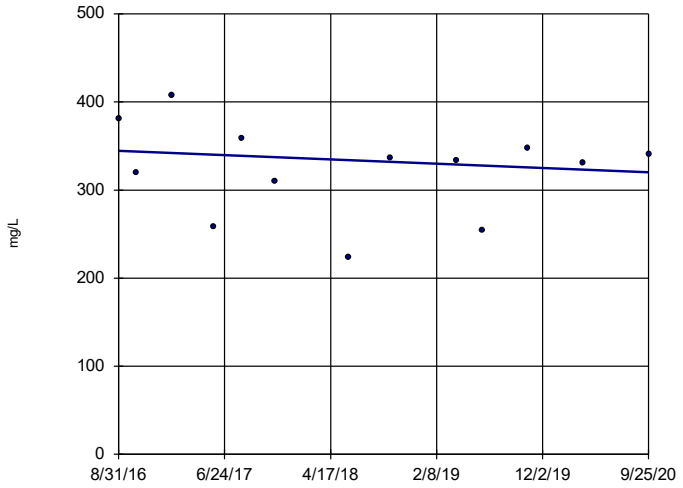
Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-117



n = 13

Slope = -6.012 units per year.

Mann-Kendall statistic = -10 critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

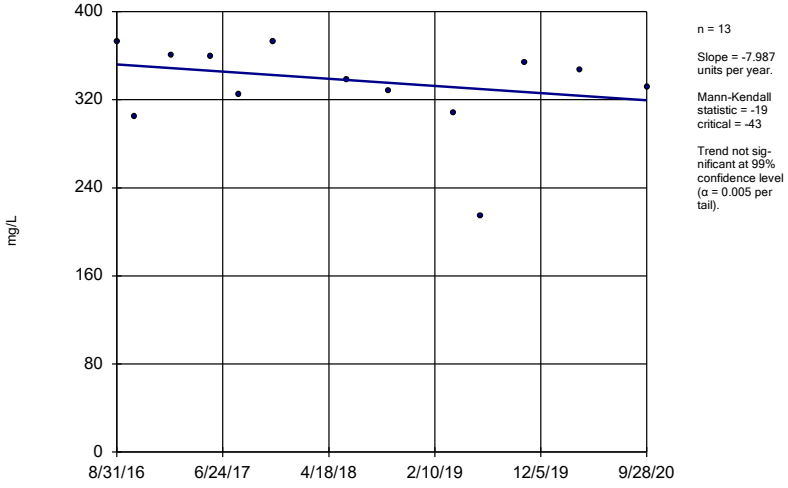
Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27b Groundwater Stats Consulting. UG

Sen's Slope Estimator

HGWC-118



n = 13

Slope = -7.987 units per year.

Mann-Kendall statistic = -19 critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:55 PM View: Trend Tests

Plant Hammond Client: Southern Company Data: Hammond AP-4

FIGURE F.

Upper Tolerance Limit Summary Table

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 2/17/2021, 3:03 PM

Constituent	Upper Lim.	Lower Lim.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.003	n/a	n/a	36	n/a	n/a	94.44	n/a	n/a	0.1578	NP Inter(NDs)
Arsenic (mg/L)	0.005	n/a	n/a	45	n/a	n/a	95.56	n/a	n/a	0.09944	NP Inter(NDs)
Barium (mg/L)	0.091	n/a	n/a	45	n/a	n/a	0	n/a	n/a	0.09944	NP Inter(normality)
Beryllium (mg/L)	0.003	n/a	n/a	45	n/a	n/a	91.11	n/a	n/a	0.09944	NP Inter(NDs)
Cadmium (mg/L)	0.0025	n/a	n/a	45	n/a	n/a	100	n/a	n/a	0.09944	NP Inter(NDs)
Chromium (mg/L)	0.01	n/a	n/a	45	n/a	n/a	26.67	n/a	n/a	0.09944	NP Inter(normality)
Cobalt (mg/L)	0.005	n/a	n/a	45	n/a	n/a	84.44	n/a	n/a	0.09944	NP Inter(NDs)
Combined Radium 226 & 228 (pCi/L)	1.403	n/a	n/a	45	0.6915	0.34	0	None	No	0.05	Inter
Fluoride (mg/L)	0.1855	n/a	n/a	48	0.0799	0.05086	25	Kaplan-Meier	No	0.05	Inter
Lead (mg/L)	0.005	n/a	n/a	45	n/a	n/a	66.67	n/a	n/a	0.09944	NP Inter(NDs)
Lithium (mg/L)	0.03	n/a	n/a	45	n/a	n/a	48.89	n/a	n/a	0.09944	NP Inter(normality)
Mercury (mg/L)	0.0005	n/a	n/a	36	n/a	n/a	75	n/a	n/a	0.1578	NP Inter(NDs)
Molybdenum (mg/L)	0.01	n/a	n/a	36	n/a	n/a	88.89	n/a	n/a	0.1578	NP Inter(NDs)
Selenium (mg/L)	0.01	n/a	n/a	36	n/a	n/a	77.78	n/a	n/a	0.1578	NP Inter(NDs)
Thallium (mg/L)	0.001	n/a	n/a	36	n/a	n/a	100	n/a	n/a	0.1578	NP Inter(NDs)

FIGURE G.

PLANT HAMMOND AP-4 GWPS			
Constituent Name	**MCL**	**Background Limit**	**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	0.091	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)		0.005	0.005
Combined Radium, Total (pCi/L)	5	1.4	5
Fluoride, Total (mg/L)	4	0.19	4
Lead, Total (mg/L)		0.005	0.005
Lithium, Total (mg/L)		0.03	0.03
Mercury, Total (mg/L)	0.002	0.0005	0.002
Molybdenum, Total (mg/L)		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*

**GWPS = Groundwater Protection Standard*

FIGURE H.

State Confidence Interval - All Results (No Significant)

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 12/22/2020, 6:01 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-101	0.005	0.00039	0.006	No	13	92.31	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-102	0.005	0.00036	0.006	No	8	50	No	0.004	NP (normality)
Arsenic (mg/L)	HGWC-109	0.002875	0.001355	0.006	No	13	0	No	0.01	Param.
Arsenic (mg/L)	HGWC-117	0.005	0.00037	0.006	No	13	92.31	No	0.01	NP (NDs)
Barium (mg/L)	HGWC-101	0.0473	0.04081	2	No	13	0	sqrt(x)	0.01	Param.
Barium (mg/L)	HGWC-102	0.03521	0.02579	2	No	8	0	No	0.01	Param.
Barium (mg/L)	HGWC-103	0.04112	0.03476	2	No	13	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-105	0.0745	0.066	2	No	13	0	No	0.01	NP (normality)
Barium (mg/L)	HGWC-107	0.03943	0.03716	2	No	13	0	x^3	0.01	Param.
Barium (mg/L)	HGWC-109	0.08915	0.08292	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-117	0.05061	0.04064	2	No	13	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-118	0.06333	0.05368	2	No	13	0	No	0.01	Param.
Beryllium (mg/L)	HGWC-101	0.003	0.000057	0.004	No	13	53.85	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-103	0.003	0.000088	0.004	No	13	84.62	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-117	0.003	0.000066	0.004	No	13	69.23	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-101	0.0003	0.0001	0.005	No	13	7.692	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-102	0.0006617	0.0001883	0.005	No	8	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-103	0.0008	0.0006585	0.005	No	13	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-107	0.00125	0.00009	0.005	No	13	46.15	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-117	0.0007915	0.0005593	0.005	No	13	0	No	0.01	Param.
Chromium (mg/L)	HGWC-101	0.01	0.00064	0.1	No	13	76.92	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-102	0.01	0.00051	0.1	No	8	75	No	0.004	NP (NDs)
Chromium (mg/L)	HGWC-103	0.01	0.00063	0.1	No	13	61.54	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-105	0.01	0.00064	0.1	No	13	76.92	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-107	0.01	0.00074	0.1	No	13	92.31	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-109	0.01	0.0014	0.1	No	13	84.62	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-117	0.01	0.00067	0.1	No	13	76.92	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-118	0.01	0.00081	0.1	No	13	69.23	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-101	0.002862	0.001953	0.005	No	13	7.692	No	0.01	Param.
Cobalt (mg/L)	HGWC-102	0.002645	0.0008778	0.005	No	8	0	sqrt(x)	0.01	Param.
Cobalt (mg/L)	HGWC-103	0.002358	0.001719	0.005	No	13	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-105	0.0025	0.00044	0.005	No	13	23.08	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-109	0.002099	0.001205	0.005	No	13	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-117	0.00923	0.004754	0.005	No	13	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-118	0.0025	0.0004	0.005	No	13	46.15	No	0.01	NP (normality)
Combined Radium 226 & 228 (pCi/L)	HGWC-101	0.9909	0.4373	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-102	1.418	0.6385	5	No	7	0	x^2	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-103	1.027	0.4663	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-105	0.9844	0.5634	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-107	1.212	0.5578	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-109	0.8708	0.4961	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-117	0.9457	0.4194	5	No	13	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-118	1.303	0.5322	5	No	12	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-101	0.1	0.05	4	No	14	85.71	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-102	0.22	0.1	4	No	8	87.5	No	0.004	NP (NDs)
Fluoride (mg/L)	HGWC-103	0.13	0.06	4	No	14	71.43	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-105	0.13	0.07	4	No	14	50	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-107	0.0949	0.03505	4	No	14	50	No	0.01	Param.
Fluoride (mg/L)	HGWC-109	0.126	0.07158	4	No	14	14.29	No	0.01	Param.
Fluoride (mg/L)	HGWC-117	0.11	0.09	4	No	14	50	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-118	0.3	0.072	4	No	15	0	No	0.01	NP (normality)
Lead (mg/L)	HGWC-101	0.005	0.0009	0.005	No	13	92.31	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-102	0.005	0.00011	0.005	No	8	87.5	No	0.004	NP (NDs)
Lead (mg/L)	HGWC-103	0.005	0.00018	0.005	No	13	69.23	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-105	0.005	0.000068	0.005	No	13	76.92	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-107	0.005	0.00021	0.005	No	13	76.92	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-109	0.005	0.000058	0.005	No	13	84.62	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-117	0.005	0.00016	0.005	No	13	69.23	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-118	0.005	0.00022	0.005	No	13	69.23	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-102	0.001312	0.0009955	0.03	No	8	0	x^2	0.01	Param.
Lithium (mg/L)	HGWC-103	0.03	0.0015	0.03	No	13	23.08	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-105	0.004188	0.003797	0.03	No	13	0	No	0.01	Param.
Lithium (mg/L)	HGWC-107	0.03	0.00092	0.03	No	13	61.54	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-109	0.03	0.0009	0.03	No	13	46.15	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-117	0.03	0.0012	0.03	No	13	23.08	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-118	0.03	0.0015	0.03	No	13	46.15	No	0.01	NP (normality)

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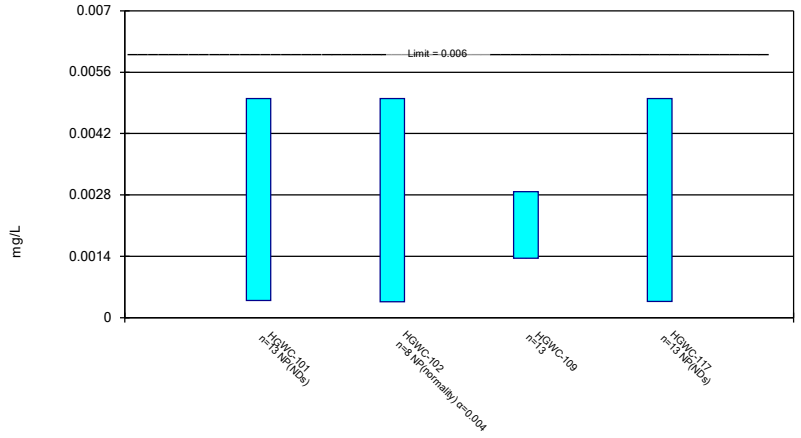
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

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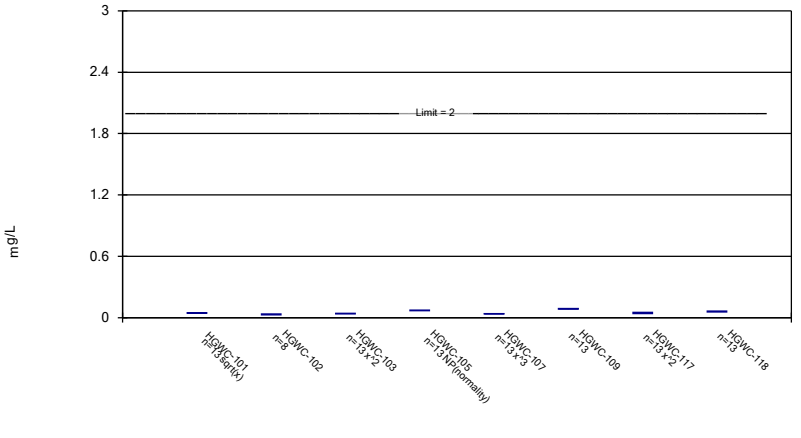
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

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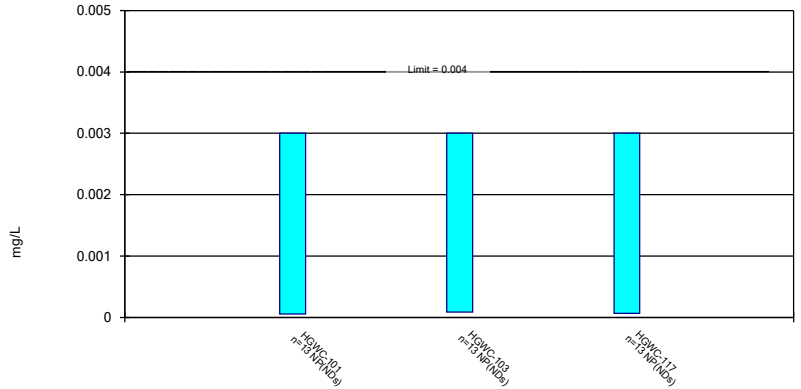
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

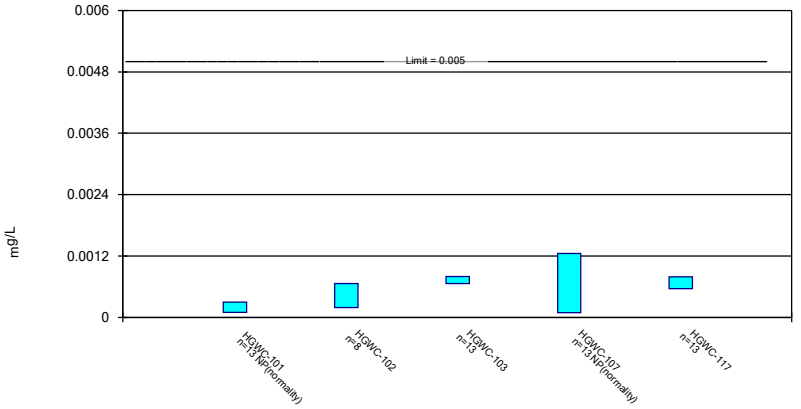


Constituent: Beryllium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27 . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

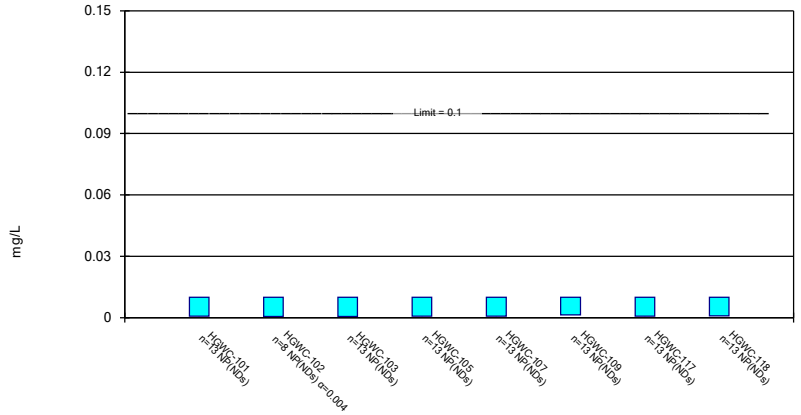


Constituent: Cadmium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27 . UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

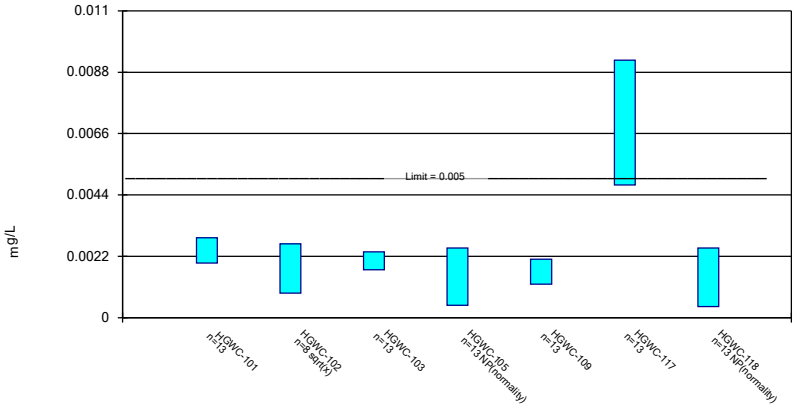


Constituent: Chromium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27 . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

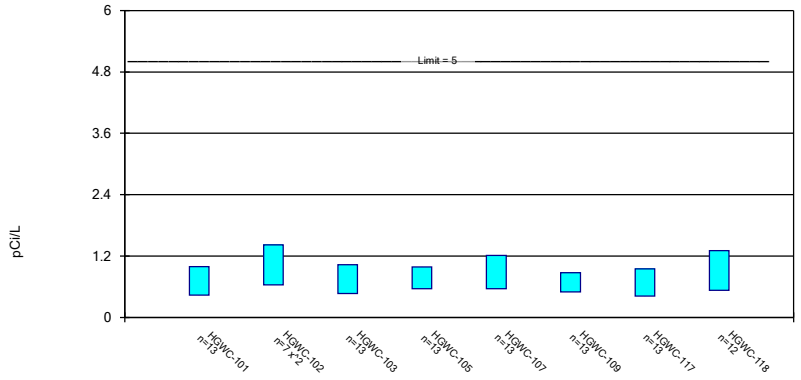


Constituent: Cobalt Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27 . UG

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

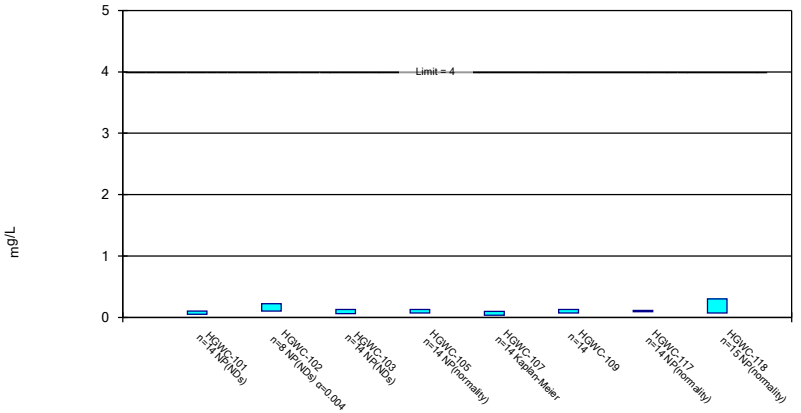


Constituent: Combined Radium 226 & 228 Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27 . UG

Parametric and Non-Parametric (NP) Confidence Interval

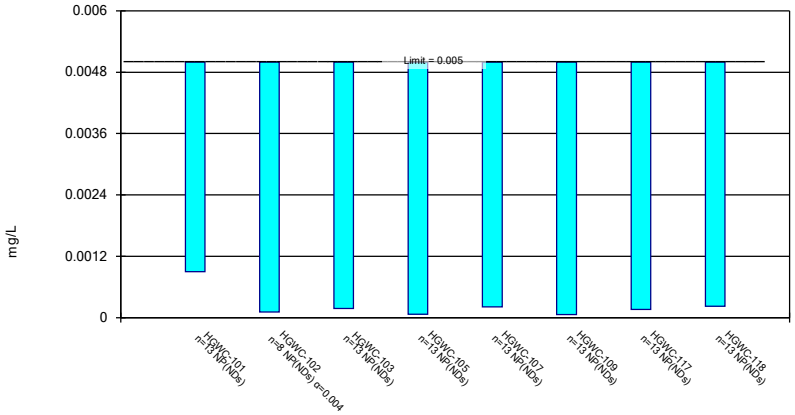
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

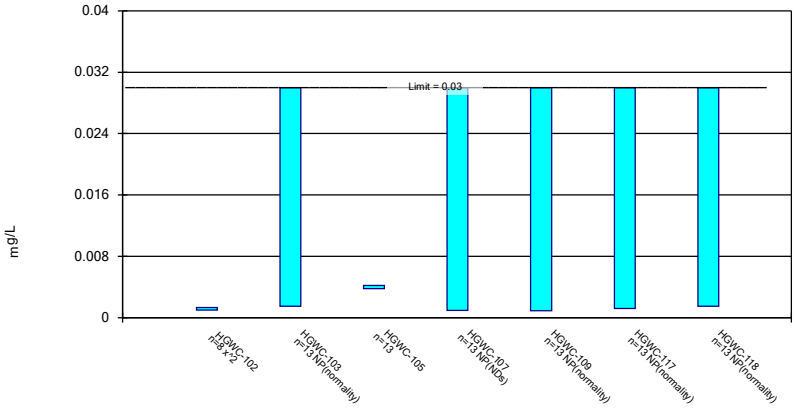


Constituent: Lead Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sanitas™ v.9.6.27 . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4