



Prepared for

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

**2021 ANNUAL GROUNDWATER
MONITORING & CORRECTIVE
ACTION REPORT**

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

Prepared by

Geosyntec 
consultants

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581

July 2021

CERTIFICATION STATEMENT

This *2021 Annual 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

July 30, 2021
Date

SUMMARY

This summary of the *2021 Annual Groundwater Monitoring and Corrective Action Report* provides the status of groundwater monitoring and corrective action program between August 2020 and July 2021 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 6¹ of the U.S. Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D).

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



Plant Hammond and the Site

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. 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 2020-2021 annual reporting period, the Site remained in assessment monitoring.

During the 2020-2021 annual reporting period, Geosyntec conducted groundwater sampling events in August 2020, September 2020, and March 2021. Groundwater

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

samples were submitted to Pace Analytical Services, LLC, for analysis. Per the CCR rule, groundwater results for September 2020 and March 2021 data were evaluated in accordance with the certified statistical methods. That evaluation identified statistically significant values of Appendix III² and Appendix IV³ constituents, as presented in the table below. The March 2021 sampling event is the initial event that a statistically significant level of an Appendix IV parameter has been identified at AP-4.

Based on review of the Appendix III and Appendix IV statistical results completed for the groundwater monitoring through March 2021, the Site will continue in assessment monitoring. Georgia Power is evaluating the statistically significant level of cobalt identified in well HGWC-117 to assess whether the unit will enter an assessment of corrective measures program. Georgia Power will continue routine groundwater monitoring and reporting at the Site during the cobalt evaluation. Reports will be posted to the website and provided semiannually to GA EPD.

Appendix III Parameter	September 2020	March 2021
Boron	HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118	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	HGWC-102, HGWC-103, HGWC-105, HGWC-117, HGWC-118
Chloride	HGWC-102, HGWC-103, HGWC-117	HGWC-102, HGWC-103, HGWC-117
pH	--	HGWC-101
Sulfate	HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118	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	HGWC-102, HGWC-103, HGWC-105, HGWC-117
Appendix IV Parameter	September 2020	March 2021
Cobalt	--	HGWC-117

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

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LIST OF ACRONYMS

AP	ash pond
ASD	alternate source demonstration
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 *2021 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 August 2020 through July 2021.

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. This report includes the results of the initial annual monitoring event conducted in August 2020 and the subsequent semiannual assessment monitoring events conducted in September 2020 and March 2021.

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 was 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. Georgia Power plans to perform closure by removal of CCR from AP-4.

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 August 2020 and July 2021, except where noted. 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-1**. The installation report was submitted to GA EPD under separate cover in November 2020.

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. The top of the PVC well casing [top of casing (TOC) elevation] and the survey pin installed at each well pad were surveyed to within 0.5-foot horizontal accuracy and to 0.01-foot vertical accuracy. The horizontal location (i.e., northings and eastings) was recorded in feet relative to the North America Datum of 1983 (NAD) with the vertical elevation recorded in feet relative to the North American Vertical Datum of 1988. The new survey data are incorporated into this report's applicable tables and figures. 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. The certified well survey data is also presented in **Appendix A-2**.

The well and piezometer networks are inspected during groundwater monitoring events 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 2020, September 2020, and March 2021 events are provided in **Appendix B**.

Based on review of field logs, monitoring wells HGWA-111, HGWA-113, HGWC-117, and HGWC-118 were redeveloped in June 2021 to improve turbidity measurements.

Monitoring well HGWC-117 showed increased sediment intake through the filter pack during redevelopment activities (surge and purge method) indicating potential well construction issues. Due to the concern regarding well construction integrity, Georgia Power plans to install a replacement well at the same depth adjacent to HGWC-117 to further evaluate groundwater conditions. Redevelopment activities were performed on June 15 through 18 and June 23, 2021; development and calibration logs are provided in **Appendix C**.

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 and March 2021. 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 HGWC-102, 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**. The July 2020 data for well HGWC-102 was received too late to include with the previous annual monitoring report; therefore, these data are included herein for program completeness.

Following the redevelopment activities described in Section 2.1, a supplemental groundwater sample was collected from HGWC-117 June 23, 2021, to evaluate post-redevelopment groundwater quality conditions relative to historical data. The sample was analyzed for Appendix III constituents and the Appendix IV constituent, cobalt. The associated laboratory report is 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, September 2020, and March 2021 sampling events are presented in **Table 3**. The 2020 survey data was used to calculate the groundwater elevations for the three events.

The groundwater elevation data were used to prepare potentiometric surface contour maps for the August 2020, September 2020, and March 2021 events, which are presented on **Figures 3, 4, and 5**, 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 2020, September 2020, and March 2021 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. When possible, 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 0.016 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.

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

where:

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

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

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

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

Aquifer testing was conducted by 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 5.86×10^{-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 0.18 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 \pm 0.1 Standard Units (s.u.).
- Conductivity \pm 5%.
- \pm 0.2 milligrams per liter (mg/L) or \pm 10%, whichever is greater for dissolved oxygen (DO) > 0.5 mg/L. No criterion applies if DO < 0.5 mg/L, record only.
- Turbidity measured less than 5 nephelometric turbidity units (NTU), or measured between 5 and 10 NTU following three hours of purging.

Following purging, and once stabilization was achieved, unfiltered samples were collected into appropriately preserved laboratory-supplied sample containers. If turbidity remained above 10 NTU after three hours of purging, in conjunction with stabilized pH, conductivity, and ORP field measurements as previously specified, both an unfiltered and filtered groundwater sample was collected. An in-line 0.45-micron filter was used to collect the filtered sample; a new filter was used for each sample. The in-line filters were conditioned prior to filling sample bottles by allowing at least 2 filter volumes of water to pass through before transferring the water to the sample bottles. 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 and equipment calibration 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, September 2020, March 2021 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 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 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 and March 2021 assessment monitoring event.

Pursuant to § 257.95(f), assessment monitoring should continue based on these statistical results.

Statistical analysis of the March 2021 data identified an SSL of Appendix IV constituent cobalt above the established state GWPS (0.005 mg/L) in downgradient well HGWC-117. This is the first reporting period for which an SSL has been identified for any Appendix IV constituents in an AP-4 compliance monitoring well. A groundwater exceedance notification acknowledging the SSL of cobalt will be placed in the Operating Record within 30 days of statistically identifying the exceedance, pursuant to § 257.95(g).

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, and therefore Georgia Power will continue to monitor groundwater at AP-4 in accordance with the assessment monitoring program regulations of § 257.95.

Statistical analyses of the compiled AP-4 groundwater data identified an SSL of cobalt in compliance well HGWC-117 following the March 2021 semiannual monitoring event. As discussed in Section 2, HGWC-117 was redeveloped and subsequently sampled June 23, 2021, to evaluate post-redevelopment groundwater concentrations of cobalt relative to historical data. Pace Analytical reported a cobalt concentration of 0.016 mg/L for the June 23, 2021, groundwater sample, which is in excess of the applicable GWPS. Due to past flooding of the Coosa River in 2019 and 2020 and higher turbidity measured since 2018 at HGWC-117, as well as potential well construction issues (observed during redevelopment), Georgia Power plans to install a well at the same depth adjacent to HGWC-117 to further evaluate groundwater conditions. In accordance with § 257.96, Georgia Power will evaluate the data from the replacement well to determine if an assessment of corrective measures will be initiated for the unit or if an alternative source demonstration (ASD) may be prepared within 90 days of the March 2021 groundwater exceedance notification.

6.0 CONCLUSIONS & FUTURE ACTIONS

This *2021 Annual 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 August 2020 to July 2021, Georgia Power conducted an initial Appendix IV assessment monitoring event in August 2020 and two semiannual assessment monitoring events in September 2020 and March 2021. Statistical evaluation of the compiled groundwater quality data following the March 2021 event identified an SSL of Appendix IV constituent cobalt in excess of the state GWPS (0.005 mg/L).

In accordance with § 257.96, within 90 days of the March 2021 SSL notification, Georgia Power will either initiate an assessment of corrective measures for the unit or prepare an ASD documenting the source of cobalt does not originate from the unit. As part of these efforts to evaluate groundwater conditions, Georgia Power plans to install a well in July 2021 at the same depth adjacent to HGWC-117 to further evaluate groundwater conditions. Georgia Power will continue to monitor groundwater in accordance with the assessment monitoring program as specified in § 257.95. The next assessment monitoring event for AP-4 is scheduled for August 2021. The August 2021 semiannual assessment monitoring event will be a combined event to meet the requirements of §257.95(b) and (d)(1) and will include sampling and analysis of all Appendix III and IV constituents.

7.0 REFERENCES

- Geosyntec Consultants, 2019. *2019 Annual Groundwater Monitoring & Corrective Action Report – Georgia Power Company, Plant Hammond Ash Pond 4 (AP-4)*. July 2019.
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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⁾	Ground Surface Elevation (ft)	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
<i>Compliance Monitoring Well</i>										
HGWA-47	Upgradient	8/21/2020	1548990.96	1934171.84	577.39	580.33	546.84	536.84	43.74	10
HGWA-48D	Upgradient	8/20/2020	1548989.39	1934178.15	577.29	580.26	517.54	507.54	72.97	10
HGWA-111	Upgradient	8/21/2012	1548834.26	1935222.81	588.79	591.75	558.48	548.48	43.67	10
HGWA-112	Upgradient	8/21/2012	1548885.63	1935647.00	593.46	596.27	566.52	556.52	40.15	10
HGWA-113	Upgradient	10/2/2012	1548944.62	1935990.09	592.07	594.58	568.87	558.87	36.11	10
HGWC-101	Downgradient	8/7/2012	1547725.50	1936369.58	575.91	578.85	551.31	541.31	37.94	10
HGWC-102	Downgradient	8/7/2012	1547713.50	1936033.33	574.54	577.54	550.51	540.51	37.43	10
HGWC-103	Downgradient	8/8/2012	1547848.88	1935732.96	577.76	580.79	553.51	543.51	37.68	10
HGWC-105	Downgradient	8/8/2012	1547855.56	1935110.36	579.08	582.09	547.72	537.72	44.67	10
HGWC-107	Downgradient	8/8/2012	1547909.99	1934442.24	576.43	579.31	551.51	541.51	38.20	10
HGWC-109	Downgradient	8/15/2012	1548627.41	1934362.77	573.66	576.77	555.81	545.81	31.36	10
HGWC-117	Downgradient	8/14/2012	1548100.77	1937180.43	579.31	581.98	552.12	542.12	40.26	10
HGWC-118	Downgradient	10/1/2012	1547980.56	1936946.37	576.52	579.02	548.51	538.51	40.91	10
<i>Piezometer</i>										
MW-12	Downgradient	10/21/2014	1547853.78	1937525.46	580.59	583.27	555.84	545.84	37.83	10
GWC-4	Downgradient	8/8/2012	1547898.31	1935398.70	577.73	580.65	543.47	533.47	47.58	10
GWC-6	Downgradient	8/13/2012	1547843.93	1934800.45	578.55	581.63	553.90	543.90	38.13	10
GWC-8	Downgradient	8/9/2012	1548167.13	1934342.94	577.13	579.99	549.47	539.47	40.92	10
GWA-14	Upgradient	10/2/2012	1548982.59	1936642.58	589.70	592.14	561.40	551.40	41.14	10
GWA-15	Upgradient	8/22/2012	1548766.17	1936808.47	588.37	591.56	571.44	561.44	30.52	10
GWA-16	Upgradient	8/21/2012	1548592.74	1937210.99	579.58	582.55	569.94	559.94	23.01	10
GWC-19	Upgradient	8/14/2012	1547892.89	1936572.97	576.90	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	January 19, 2021	March 10-19, 2021	June 23, 2021
Purpose of Sampling Event:		Supplemental	App. IV Annual	Assessment	Supplemental	Supplemental	Supplemental	Assessment	Supplemental
HGWA-47	Upgradient	--	--	X	X	X	X	X	--
HGWA-48D	Upgradient	--	--	X	X	X	X	X	--
HGWA-111	Upgradient	--	X	X	--	--	--	X	--
HGWA-112	Upgradient	--	X	X	--	--	--	X	--
HGWA-113	Upgradient	--	X	X	--	--	--	X	--
HGWC-101	Downgradient	--	X	X	--	--	--	X	--
HGWC-102	Downgradient	X	X	X	--	--	--	X	--
HGWC-103	Downgradient	--	X	X	--	--	--	X	--
HGWC-105	Downgradient	--	X	X	--	--	--	X	--
HGWC-107	Downgradient	--	X	X	--	--	--	X	--
HGWC-109	Downgradient	--	X	X	--	--	--	X	--
HGWC-117	Downgradient	--	X	X	--	--	--	X	X
HGWC-118	Downgradient	--	X	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		March 10, 2021	
		Depth to Water (ft BTOC)	Groundwater Elevations (ft)	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	6.78	573.55
HGWA-48D	580.26	--	--	9.05	571.21	6.65	573.61
HGWA-111	591.75	12.51	579.24	13.47	578.28	11.25	580.50
HGWA-112	596.27	12.40	583.87	14.60	581.67	9.60	586.67
HGWA-113	594.58	11.57	583.01	12.50	582.08	4.73	589.85
HGWC-101	578.85	13.27	565.58	13.60	565.25	13.06	565.79
HGWC-102	577.54	13.03	564.51	13.73	563.81	13.77	563.77
HGWC-103	580.79	13.91	566.88	14.03	566.76	13.25	567.54
HGWC-105	582.09	17.90	564.19	18.55	563.54	18.82	563.27
HGWC-107	579.31	15.11	564.20	15.67	563.64	15.68	563.63
HGWC-109	576.77	8.85	567.92	9.30	567.47	7.70	569.07
HGWC-117	581.98	16.80	565.18	17.40	564.58	17.15	564.83
HGWC-118	579.02	13.45	565.57	14.00	565.02	13.45	565.57
Piezometer							
MW-12	583.27	18.54	564.73	19.20	564.07	NM	NM
GWC-4	580.65	13.71	566.94	13.85	566.80	13.04	567.61
GWC-6	581.63	17.29	564.34	18.77	562.86	17.66	563.97
GWC-8	579.99	14.29	565.70	14.55	565.44	12.72	567.27
GWA-14	592.14	7.95	584.19	8.80	583.34	3.25	588.89
GWA-15	591.56	9.54	582.02	10.65	580.91	7.90	583.66
GWA-16	582.55	5.65	576.90	5.85	576.70	5.27	577.28
GWC-19	579.83	13.20	566.63	13.45	566.38	12.70	567.13
Surface Water Level Gauge Point							
Coosa River ⁽²⁾	--	--	564.35	--	563.50	--	563.10
P-105	--	--	564.36	--	(3)	--	(3)
Unnamed Creek	--	--	565.05	--	565.12	--	NM

Notes:

NM = not measured.

ft = feet.

ft BTOC = feet below top of casing.

(1) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Survey completed by GEL Solution dated May 10, 2020 and September 10, 2020 (for wells HGWA-47 and HGWA-48D).

(2) Water levels for Coosa River were recorded approximately 3,900 ft upstream of AP-4 at a staff gauge located near AP-1.

(3) P-105 was abandoned during the September 2020 sampling event due to access constraints.

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

Flow Path Direction ⁽¹⁾	August 24, 2020					September 14, 2020					March 10, 2021				
	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)	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	588.89	565.57	1,075	0.022	0.019
Central Flow Path (HGWA-113 to HGWC-102)	583.01	564.51	1,235	0.015		582.08	563.81	1,235	0.015		589.85	563.77	1,235	0.021	
Western Flow Path (HGWA-111 to HGWC-107)	579.24	564.20	1,210	0.012		578.28	563.64	1,210	0.012		580.50	563.63	1,210	0.014	

Flow Path Direction ⁽¹⁾	Average 2020/2021			
	K _h (ft/d)	n	Δh/Δl (ft/ft)	V (ft/d) ⁽²⁾
Eastern Flow Path (GWA-14 to HGWC-118)	1.67	0.15	0.016	0.18
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

h₁, h₂ = 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, 4, and 5 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-47 ⁽⁴⁾	HGWA-47 ⁽⁴⁾	HGWA-48D ⁽⁴⁾	HGWA-48D ⁽⁴⁾	HGWA-48D ⁽⁴⁾	HGWA-48D ⁽⁴⁾	HGWA-48D ⁽⁴⁾	HGWA-111	HGWA-111	HGWA-111	HGWA-112	HGWA-112	HGWA-112
Sample Date:	9/18/2020	11/10/2020	12/15/2020	1/19/2021	3/12/2021	9/18/2020	11/11/2020	12/15/2020	1/19/2021	3/12/2021	8/25/2020	9/18/2020	3/11/2021	8/25/2020	9/18/2020	3/12/2021
Parameter ^(1,2)																
APPENDIX III																
Boron	0.0082 J	0.0064 J	<0.0052	0.015 J	0.0067 J	0.015 J	0.014 J	0.0083 J	0.015 J	0.012 J	--	0.011 J	0.010 J	--	0.0080 J	0.0061 J
Calcium	62.2	73.3	72.5	72.5	69.2	51.8	61.3	61.3	58.9	57.5	--	32.2	53.2	--	6.5	6.9
Chloride	2.7	2.7	2.9	2.8	2.7	2.6	2.6	2.7	2.7	2.6	--	2.6	3.4	--	5.2	5.3
Fluoride	0.067 J	0.065 J	0.064 J	0.057 J	0.062 J	0.098 J	0.083 J	0.081 J	0.079 J	0.085 J	0.052 J	<0.050	0.057 J	<0.050	<0.050	<0.050
pH ⁽³⁾	7.54	7.34	7.27	7.32	7.52	7.50	7.40	7.39	7.40	7.51	6.70	6.46	7.20	5.53	5.58	5.60
Sulfate	3.5	2.3	2.4	2.6	1.9	9.5	4.5	4.2	3.9	4.7	--	1.0	1.5	--	<0.50	0.52 J
TDS	195	229	233	199	217	224	221	239	224	204	--	139	207	--	62.0	56.0
APPENDIX IV																
Antimony	<0.00028	<0.00028	<0.00028	<0.00028	--	0.00038 J	0.00031 J	<0.00028	0.00042 J	--	<0.00028	--	--	<0.00028	--	--
Arsenic	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	0.0018 J	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078
Barium	0.026	0.027	0.027	0.029	0.030	0.077	0.078	0.091	0.095	0.10	0.031	0.024	0.037	0.028	0.025	0.030
Beryllium	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	0.000047 J	<0.000046	0.00014 J	<0.000046	<0.000046	0.000054 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	<0.00012	<0.00012	<0.00012	<0.00012
Chromium	0.0039 J	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	0.0013 J	0.0015 J	0.00062 J	0.0013 J	0.00077 J	0.0020 J	0.0039 J	0.0037 J	0.0045 J
Cobalt	0.00049 J	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	0.00039 J	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038
Fluoride	0.067 J	0.065 J	0.064 J	0.057 J	0.062 J	0.098 J	0.083 J	0.081 J	0.079 J	0.085 J	0.052 J	<0.050	0.057 J	<0.050	<0.050	<0.050
Lead	<0.000036	<0.000036	<0.000036	0.000038 J	<0.000036	<0.000036	<0.000036	0.00015 J	0.000056 J	0.000048 J	0.00036 J	0.00026 J	0.0011	0.00011 J	0.000065 J	0.00017 J
Lithium	0.0026 J	0.0028 J	0.0026 J	0.0030 J	0.0031 J	0.0051 J	0.0036 J	0.0045 J	0.0032 J	0.0031 J	0.0033 J	0.0021 J	0.0047 J	<0.00081	<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	<0.00069	--	0.0026 J	0.0012 J	0.00097 J	0.0018 J	--	<0.00069	--	--	<0.00069	--	--
Comb. Radium 226/228	1.11 U	0.234 U	0.529 U	0.176 U	0.000 U	1.50 U	0.776 U	1.23 U	1.35 U	0.829 U	0.570 U	0.828 U	0.354 U	0.0182 U	1.15 U	0.164 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:		HGWA-113	HGWA-113	HGWA-113	HGWC-101	HGWC-101	HGWC-101	HGWC-102 ⁽⁴⁾	HGWC-102 ⁽⁴⁾	HGWC-102 ⁽⁴⁾	HGWC-102 ⁽⁴⁾	HGWC-103	HGWC-103	HGWC-103	HGWC-105	HGWC-105	HGWC-105	
Sample Date:		8/25/2020	9/22/2020	3/16/2021	8/27/2020	9/24/2020	3/17/2021	7/21/2020	8/27/2020	9/24/2020	3/17/2021	8/27/2020	9/24/2020	3/18/2021	8/27/2020	9/24/2020	3/18/2021	
Parameter ^(1,2)																		
APPENDIX III	Boron	--	0.021 J	0.011 J	--	0.10	0.13	3.0	2.7	2.9	2.7	--	2.2	2.4	--	1.2	1.5	
	Calcium	--	7.9	8.6	--	20.3	21.8	120	106	120	111	--	91.3	83.7	--	92.9	97.7	
	Chloride	--	1.5	1.6	--	5.5	5.5	7.2	7.1	7.2	6.9	--	6.0	6.2	--	3.9	4.3	
	Fluoride	0.17	0.16	0.18	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	pH ⁽³⁾	5.95	6.10	6.14	5.32	5.48	5.41	5.72	5.70	5.82	5.82	5.78	5.82	5.60	5.51	6.45	6.63	6.57
	Sulfate	--	5.3	7.7	--	97.0	107	378	382	370	332	--	293	286	--	177	196	
	TDS	--	84.0	99.0	--	170	213	669	663	696	626	--	517	465	--	411	410	
APPENDIX IV	Antimony	<0.00028	--	--	<0.00028	--	--	<0.00028	<0.00028	<0.00028	--	<0.00028	--	--	<0.00028	--	--	
	Arsenic	<0.00078	<0.00078	0.0011 J	<0.00078	<0.00078	<0.00078	0.00083 J	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	
	Barium	0.030	0.038	0.054	0.045	0.041	0.040	0.028	0.028	0.029	0.031	0.038	0.036	0.042	0.068	0.075	0.082	
	Beryllium	0.000046 J	0.000099 J	0.00018 J	0.000057 J	0.000048 J	0.000059 J	<0.000046	<0.000046	<0.000046	<0.000046	0.000050 J	0.000088 J	0.000061 J	<0.000046	<0.000046	<0.000046	
	Cadmium	<0.00012	<0.00012	<0.00012	0.00019 J	0.00014 J	<0.00012	0.00083 J	0.00038 J	0.00032 J	0.00094	0.00082 J	0.00076 J	0.00068	<0.00012	<0.00012	<0.00012	
	Chromium	0.0031 J	0.0046 J	0.0061	<0.00055	<0.00055	0.00075 J	<0.00055	<0.00055	<0.00055	<0.00055	0.00069 J	0.00081 J	0.0030 J	<0.00055	0.00064 J	0.00058 J	
	Cobalt	<0.00038	0.00074 J	0.0013 J	0.0027 J	0.0021 J	0.0023 J	0.00098 J	0.0010 J	0.0011 J	0.0012 J	0.0019 J	0.0019 J	0.0021 J	<0.00038	0.00044 J	0.00045 J	
	Fluoride	0.17	0.16	0.18	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
	Lead	0.00022 J	0.00096 J	0.0016	<0.000036	<0.000036	<0.000036	<0.000036	<0.000036	<0.000036	<0.000036	0.00018 J	0.00028 J	0.00024 J	<0.000036	0.000049 J	0.000058 J	
	Lithium	0.0014 J	0.0018 J	0.0026 J	<0.00081	<0.00081	<0.00081	0.0013 J	0.0011 J	0.0011 J	0.0012 J	0.0016 J	0.0017 J	0.0018 J	0.0037 J	0.0038 J	0.0042 J	
	Mercury	<0.00078	--	--	<0.00078	--	--	<0.00078	<0.00078	<0.00078	--	<0.00078	--	--	<0.00078	--	--	
	Molybdenum	<0.00069	--	--	<0.00069	--	--	<0.00069	<0.00069	<0.00069	--	<0.00069	--	--	<0.00069	--	--	
	Comb. Radium 226/228	0.587 U	0.551 U	0.559 U	0.109 U	0.625 U	0.248 U	0.0938 U	1.17 U	1.42	0.401 U	0.370 U	0.804 U	0.274	0.416 U	1.11 U	0.252 U	
	Selenium	<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	--	--	

Table 5
 Summary of Groundwater Analytical Data
 Plant Hammond AP-4, Floyd County, Georgia

Well ID:		HGWC-107	HGWC-107	HGWC-107	HGWC-109	HGWC-109	HGWC-109	HGWC-117	HGWC-117	HGWC-117	HGWC-117	HGWC-118	HGWC-118	HGWC-118	
Sample Date:		8/27/2020	9/24/2020	3/18/2021	8/27/2020	9/25/2020	3/17/2021	8/27/2020	9/25/2020	3/19/2021	6/23/2021	8/26/2020	9/28/2020	3/18/2021	
Parameter ^(1,2)															
APPENDIX III	Boron	--	0.88	0.92	--	0.28	0.26	--	1.1	1.5	1.0	--	0.65	0.81	
	Calcium	--	55.4	56.0	--	48.5	37.3	--	72.8	87.3	56.5	--	88.9	85.4	
	Chloride	--	3.5	3.2	--	4.1	4.7	--	16.1	24.9	8.8	--	4.0	4.3	
	Fluoride	<0.050	0.064 J	<0.050	0.094 J	0.091 J	0.089 J	<0.050	<0.050	<0.050	<0.050	<0.050	0.072 J	0.078 J	0.079 J
	pH ⁽³⁾	6.09	6.11	6.20	6.64	6.79	6.55	5.92	6.01	6.14	5.72	6.97	7.03	7.11	
	Sulfate	--	126	128	--	24.7	28.3	--	146	162	125	--	86.0	87.8	
	TDS	--	253	255	--	188	171	--	340	371	325	--	332	328	
APPENDIX IV	Antimony	<0.00028	--	--	<0.00028	--	--	<0.00028	--	--	--	<0.00028	--	--	
	Arsenic	<0.00078	<0.00078	<0.00078	0.0011 J	0.0017 J	0.0019 J	<0.00078	<0.00078	<0.00078	--	<0.00078	<0.00078	0.0010 J	
	Barium	0.034	0.039	0.041	0.083	0.085	0.077	0.047	0.050	0.058	--	0.056	0.046	0.067	
	Beryllium	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	0.000049 J	0.000066 J	0.000081 J	--	<0.000046	<0.000046	0.000093 J	
	Cadmium	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	0.00080 J	0.00089 J	0.0010	--	<0.00012	<0.00012	<0.00012	
	Chromium	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	0.00057 J	0.00067 J	0.0010 J	--	0.00098 J	0.0017 J	0.0021 J	
	Cobalt	<0.00038	<0.00038	<0.00038	0.00086 J	0.0010 J	0.0030 J	0.011	0.011	0.011	0.016	0.00061 J	0.00048 J	0.0012 J	
	Fluoride	<0.050	0.064 J	<0.050	0.094 J	0.091 J	0.089 J	<0.050	<0.050	<0.050	<0.050	0.072 J	0.078 J	0.079 J	
	Lead	<0.000036	0.00034 J	0.000091 J	<0.000036	<0.000036	<0.000036	0.00014 J	0.00019 J	0.00038 J	--	0.00036 J	0.00022 J	0.00088 J	
	Lithium	<0.00081	0.00098 J	0.0011 J	0.0011 J	0.0010 J	<0.00081	0.0024 J	0.0031 J	0.0035 J	--	0.0028 J	0.0022 J	0.0029 J	
	Mercury	<0.000078	--	--	<0.000078	--	--	<0.000078	--	--	--	<0.000078	--	--	
	Molybdenum	<0.00069	--	--	<0.00069	--	--	<0.00069	--	--	--	<0.00069	--	--	
	Comb. Radium 226/228	0.264 U	0.576 U	0.145 U	0.989 U	0.584 U	0.556 U	0.193 U	0.155 U	0.0846 U	--	1.19	0.613 U	0.778 U	
	Selenium	<0.0016	--	--	<0.0016	--	--	<0.0016	--	--	--	<0.0016	--	--	
	Thallium	<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	0.091, 0.1	2
Beryllium	mg/L	0.003, 0.0019	0.004
Cadmium	mg/L	0.0025, 0.005	0.005
Chromium	mg/L	0.01, 0.0061	0.1
Cobalt	mg/L	0.005	0.005
Fluoride	mg/L	0.19, 0.18	4
Lead	mg/L	0.005, 0.0016	0.005, 0.0016
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

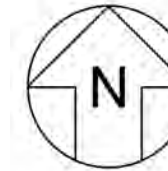
Notes:

mg/L = milligrams per liter.

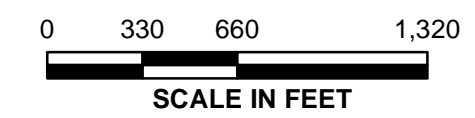
pCi/L = picocuries per liter.

1. Statistical analyses were performed on semiannual monitoring event for September 2020 and March 2021.
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). Where two numbers are present, they denote the different background levels or State GWPS for each of the two semiannual monitoring events in the order that they were determined.
3. Under the existing Georgia EPD rules, the GWPS is: (i) the maximum contaminant level (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



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



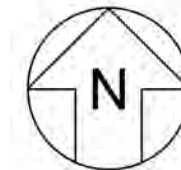
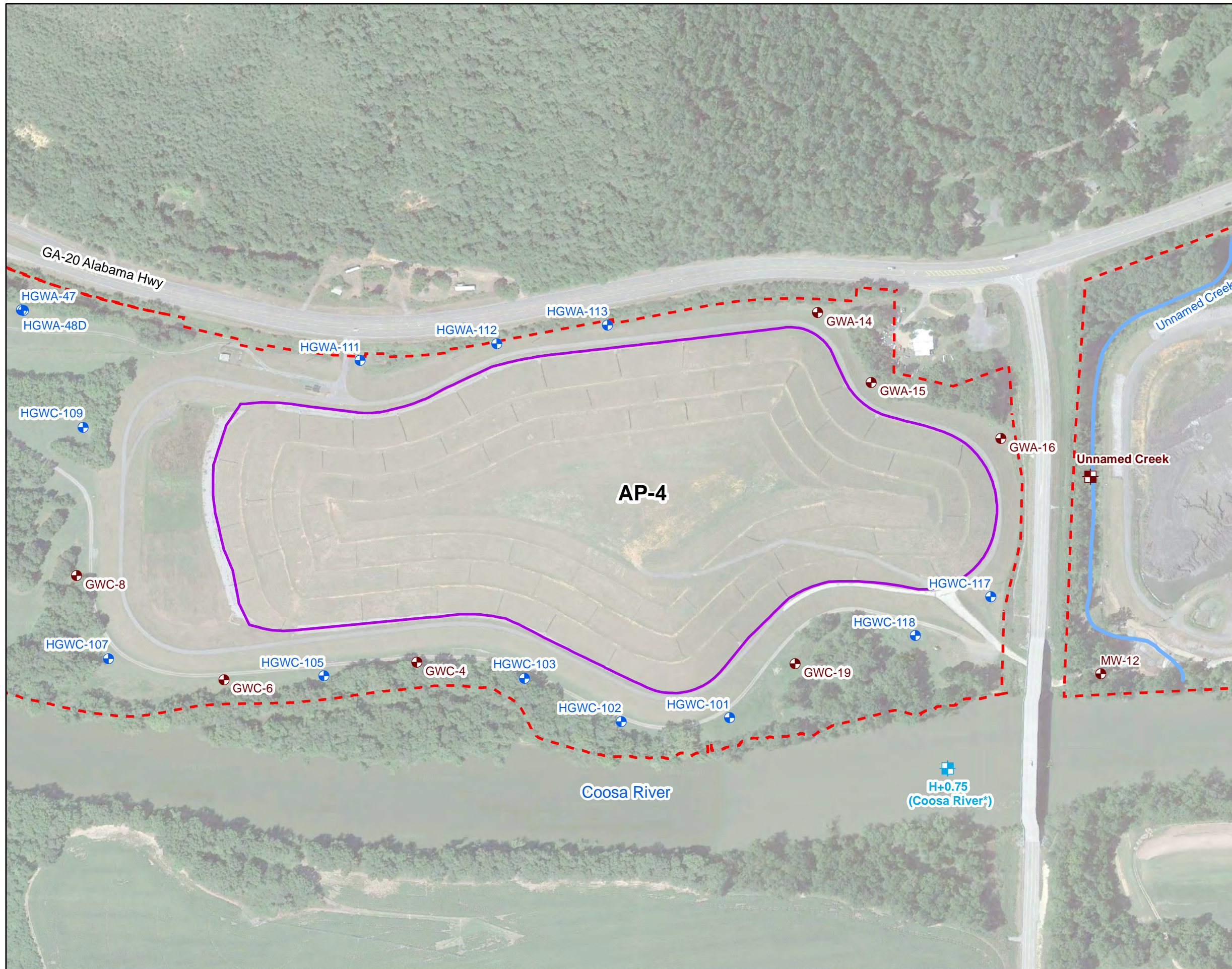
SITE LOCATION MAP

 GEORGIA POWER
 PLANT HAMMOND
 FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power
 Prepared By:  Geosyntec
 consultants

KENNESAW, GA JULY 2021

FIGURE
1



LEGEND

- Compliance Monitoring Well
- Piezometer
- Unnamed Creek
- Surface Water Sample Point
- Approximate AP-4 Boundary
- Plant Hammond Property Boundary

Notes:
 1. An asterisk (*) denotes that a surface water level gauge point for the Coosa River is located approximately 3,900 feet upstream at the staff gauge near AP-1.
 2. Aerial photograph source: Google Earth Pro, August 2019.



SCALE IN FEET

MONITORING WELL AND SURFACE WATER LOCATION NETWORK MAP

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

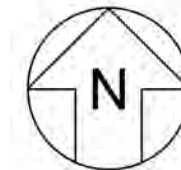
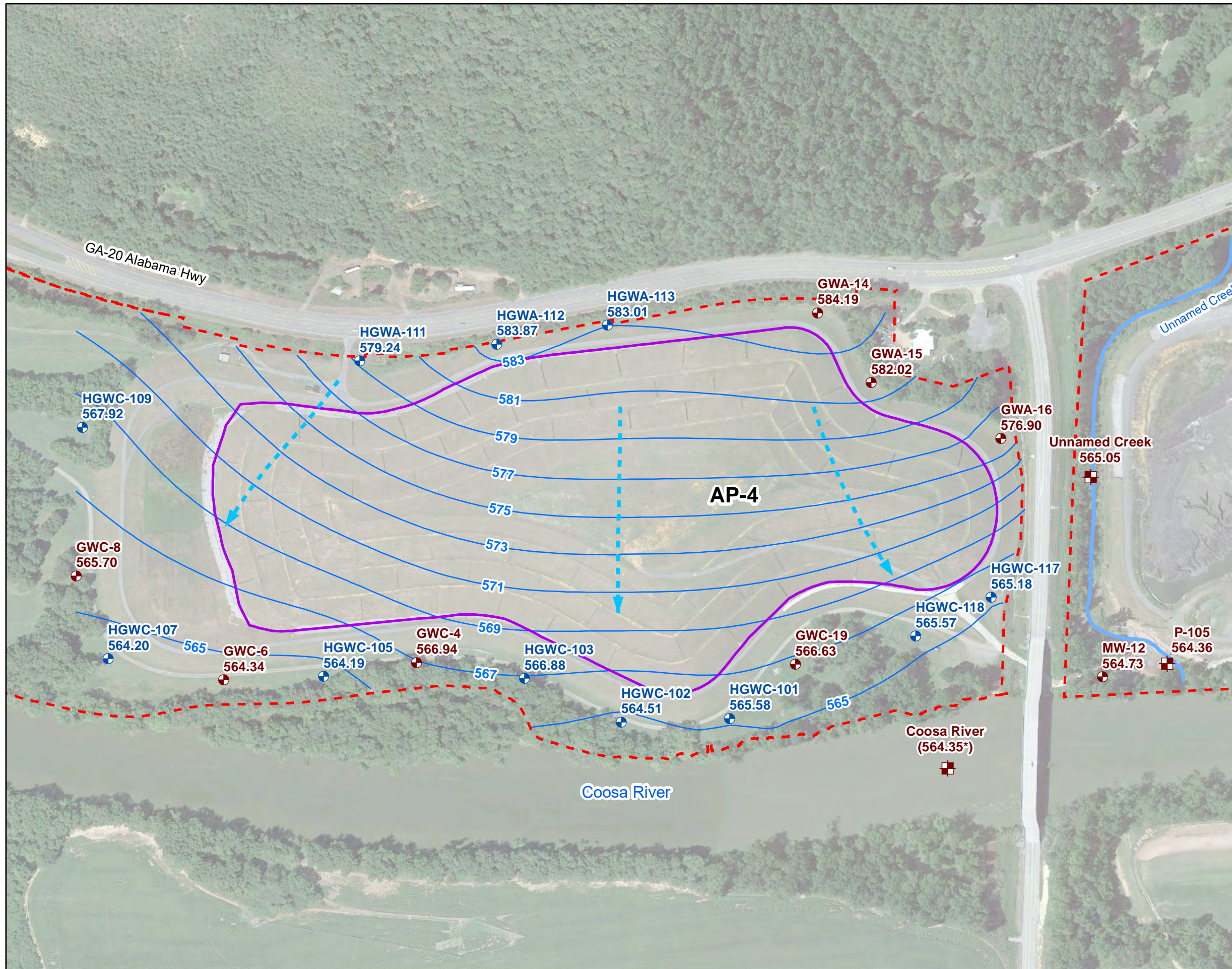
Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA

JULY 2021

FIGURE
2



- LEGEND**
- Compliance Monitoring Well
 - Piezometer
 - Surface Water Level Gauge Point
 - 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. An asterisk (*) denotes the water level recorded for the Coosa River approximately 3,900 feet upstream at the staff gauge near AP-1.
 3. Aerial photograph source: Google Earth Pro, August 2019.



SCALE IN FEET

**POTENTIOMETRIC SURFACE
CONTOUR MAP - AUGUST 2020**

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

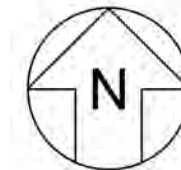
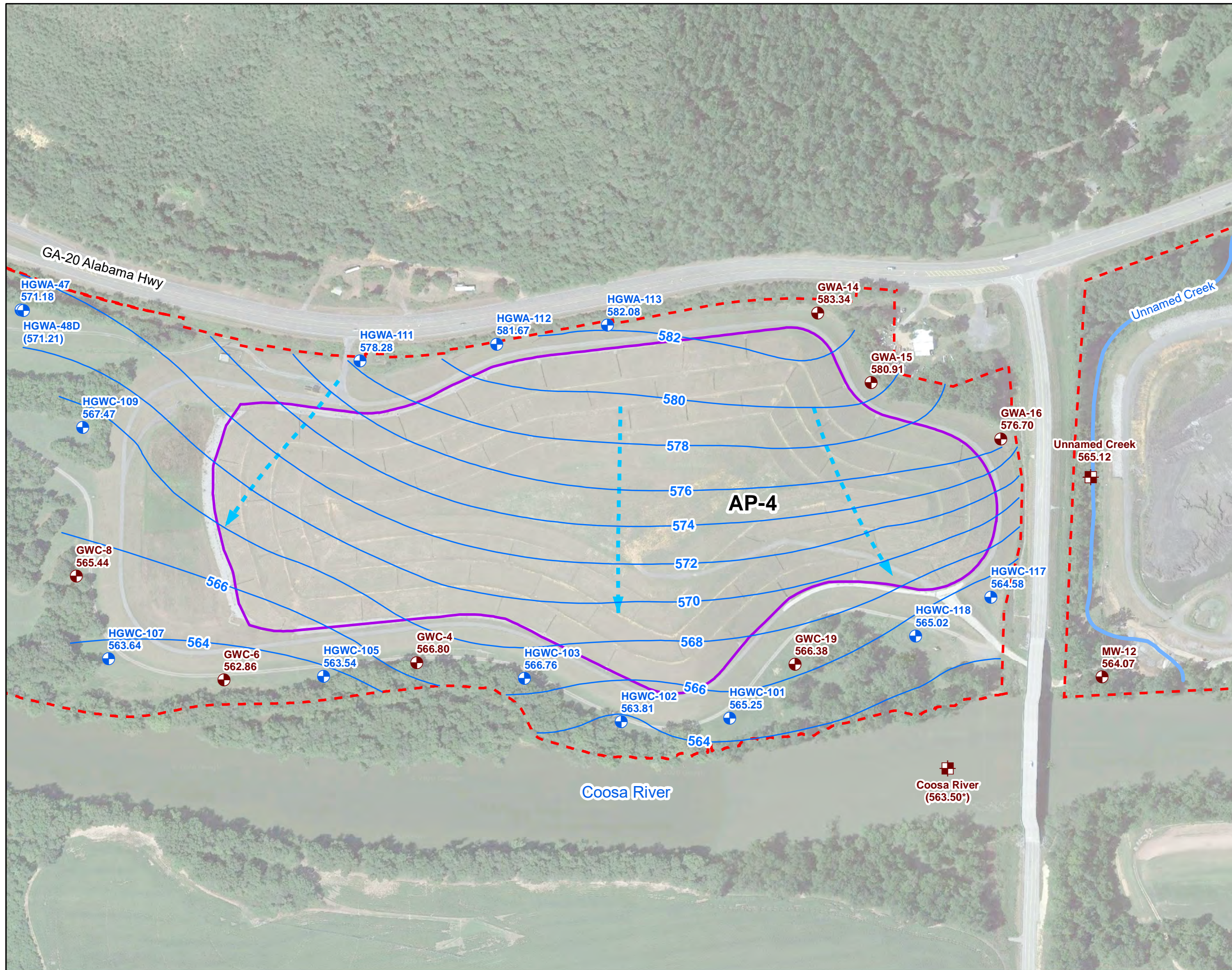
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA

JULY 2021

**FIGURE
3**



LEGEND

- Compliance Monitoring Well
- Piezometer
- Surface Water Level Gauge Point
- 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. An asterisk (*) denotes the water level recorded for the Coosa River approximately 3,900 feet upstream at the staff gauge near AP-1.
 4. Aerial photograph source: Google Earth Pro, August 2019.



SCALE IN FEET

**POTENTIOMETRIC SURFACE
CONTOUR MAP - SEPTEMBER 2020**

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

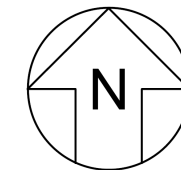
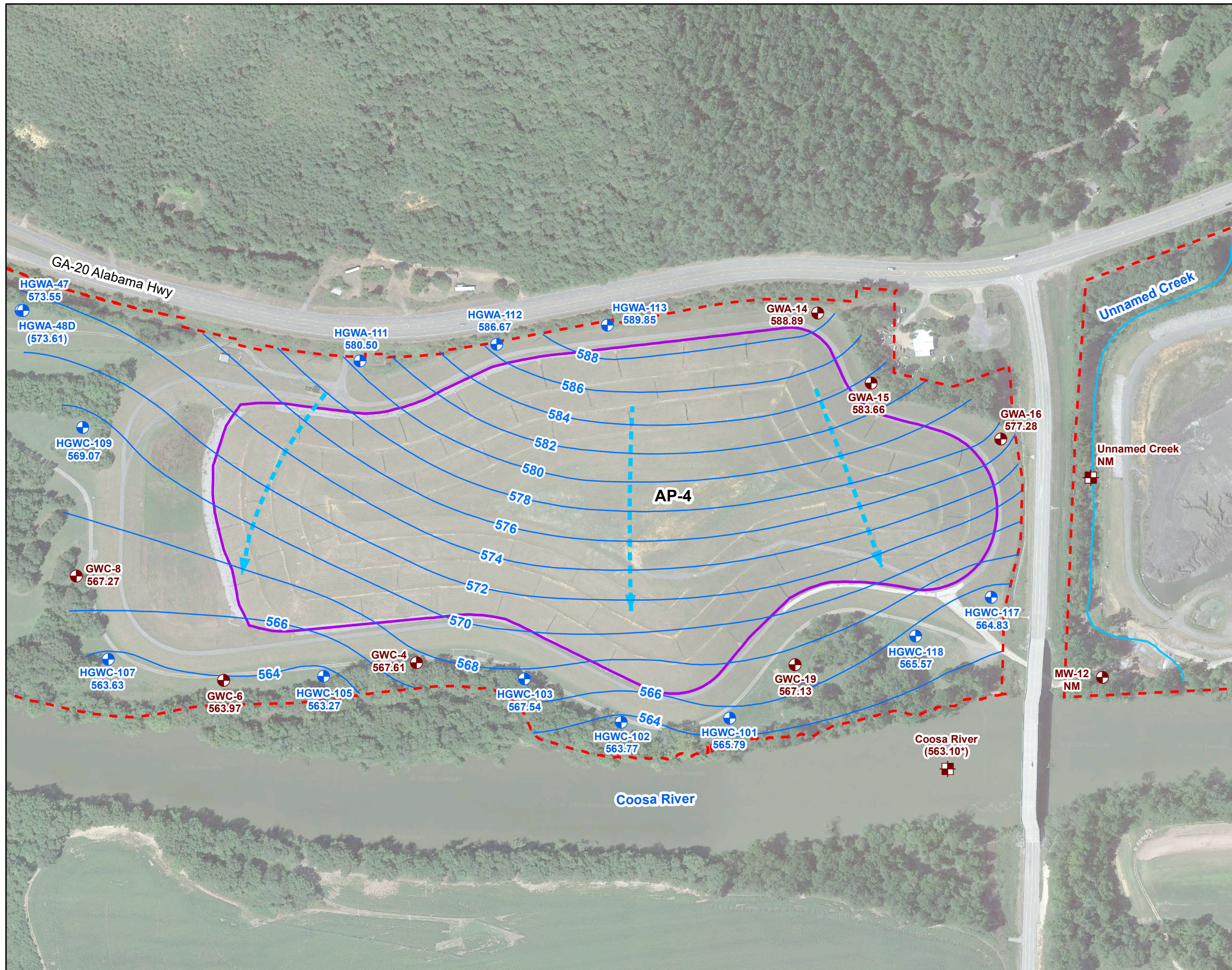
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA

JULY 2021

**FIGURE
4**



- LEGEND**
- Compliance Monitoring Well
 - Piezometer
 - Surface Water Level Gauge Point
 - 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 March 10, 2021. 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. An asterisk (*) denotes the water level recorded for the Coosa River approximately 3,900 feet upstream at the staff gauge near AP-1.
 4. NM - water elevation data not measured.
 5. Aerial photograph source: Google Earth Pro, August 2019.



**POTENTIOMETRIC SURFACE CONTOUR
MAP - MARCH 2021**

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

Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

**FIGURE
5**

KENNESAW, GA JULY 2021

APPENDIX A

APPENDIX A-1

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

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

Whitney Law, P.E.

Project Manager

Geosyntec Consultants

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Appendix C	Well Development Forms
Appendix D	Certified Well Survey Data

LIST OF ACRONYMS

AP	Ash Pond
ASTM	American Society for Testing and Materials
CCR	coal combustion residual
CFR	Code of Federal Regulations
CFS	Civil Field Services
DO	dissolved oxygen
GA EPD	Georgia Environmental Protection Division
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.

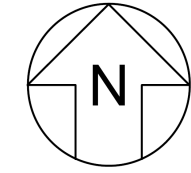
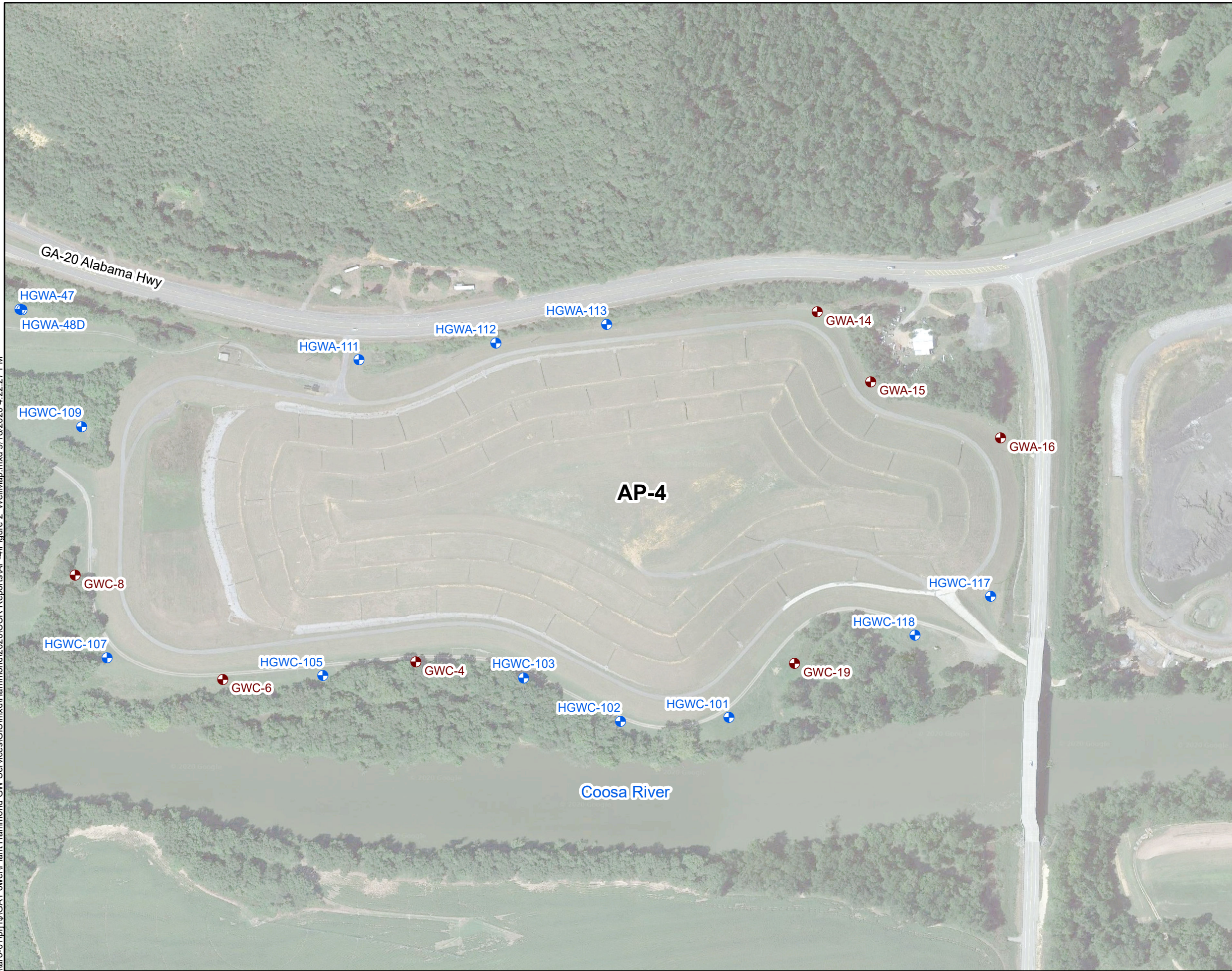
(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey was completed by GEL Solutions and certified September 10, 2020.

(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.

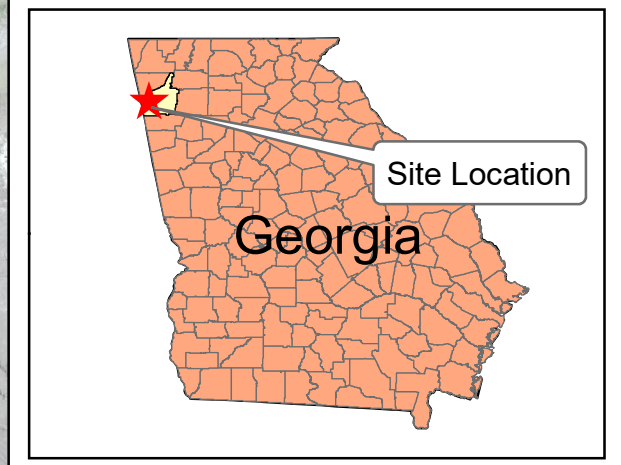
FIGURE

\\hro-01\pfr1\GA Power\Plant Hammond_GW_Services\GIS\mxd\Hammond2020\CCR Reports\AP-4\Figure 2 - WellMap.mxd 9/18/2020 4:22:27 PM



LEGEND

-  Compliance Monitoring Well
-  Piezometer



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



MONITORING WELL NETWORK MAP

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

Prepared For:  Georgia Power

Prepared By: 

KENNESAW, GA NOVEMBER 2020

FIGURE
1

APPENDIX A

Well Driller Performance Bonds

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company

, Surety upon

a certain Bond No. 800033976

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

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

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

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

does hereby continue said bond in force for the further period

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

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

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

Description of bond Performance Bond for Water Well Contractors

Premium: \$1200.00

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

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

Atlantic Specialty Insurance Company

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

Parker, Smith & Feek, Inc.

Agent

2233 112th Ave NE Bellevue, WA 98004

Address of Agent

425-709-3600

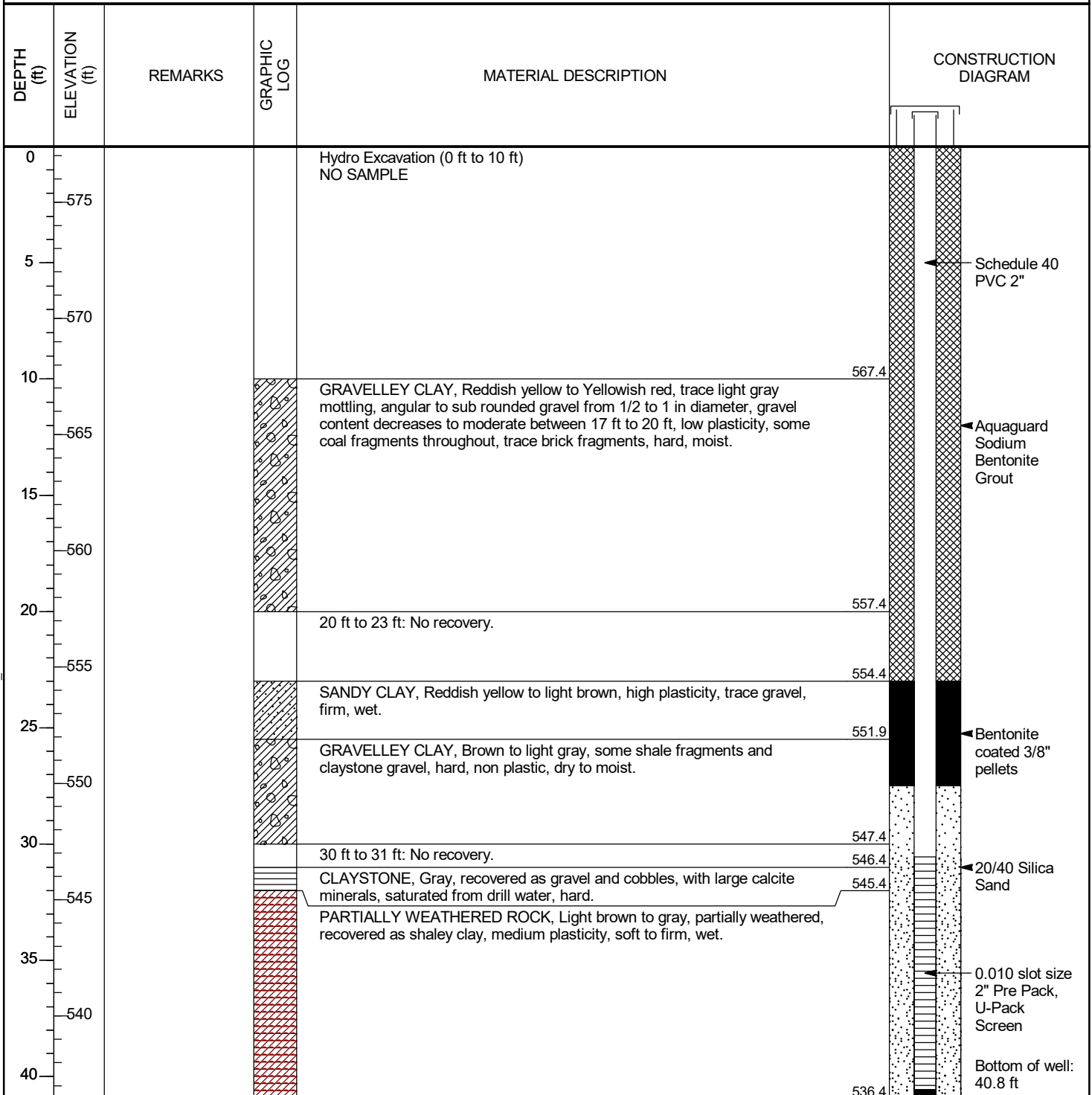
Telephone Number of Agent

APPENDIX B

Boring and Well Construction Logs

CLIENT 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

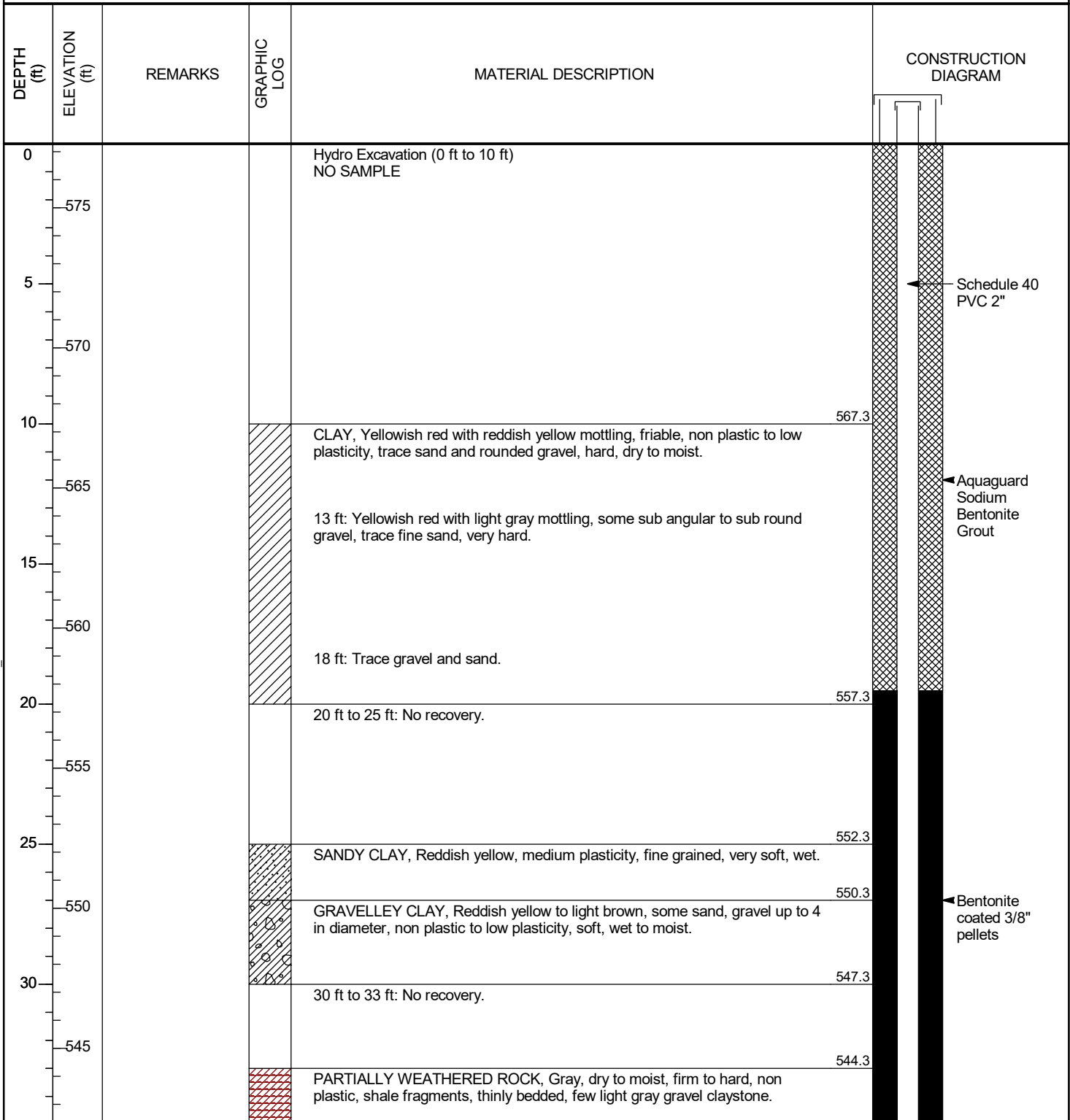
SCS MONITORING WELLS PLANT HAMMOND HGWA7 TO HGWA114 AND MW46D AUGUST 2020.GPJ ACP GINT LIBRARY CH.GLB 9/23/20



Bottom of borehole at 41.0 feet.

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

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



(Continued Next Page)





















CLIENT Southern Company Services

PROJECT NAME Plant Hammond Well Installation

PROJECT NUMBER GW6581B

PROJECT LOCATION Plant Hammond

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

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			SHALE, Light gray to brown, partially weathered, claystone gravel, medium to thin bedding, mostly pulverized by drilling, wet, some clay throughout.	
40				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.	
	535				
45					
	530				
50				50 ft to 54 ft: No recovery.	
	525				
	523.3				
55				CLAYSTONE, Light gray to yellowish red, thinly to massively bedded, gravel to cobble sized fragments, hard, wet.	
	522.3			SHALE, Light gray, thinly bedded, partially pulverized, wet to saturated, fissile.	
	520				
60				59 ft: Dry.	
	517.3			60 ft to 63 ft: No recovery.	
	515				
	514.3			SHALE, Light gray, thinly bedded to massive, gravel sized fragments, hard, wet.	
65					
	510				
70				69 ft: Dry.	
	507.3				

Bentonite coated 3/8" pellets

20/40 Silica Sand

0.010 slot size 2" Pre Pack, U-Pack Screen

Bottom of well: 70 ft

Bottom of borehole at 70.0 feet.

APPENDIX C

Well Development Forms

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



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9/10/2020

APPENDIX A-2

Certified Well Survey Reports

Certified Well Survey Report May 2020

Certified Well Survey Report September 2020

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail on Pad Northing	Nail on Pad Easting	Nail on Pad Elevation
GWA-14	1548982.5890	1936642.5820	592.14	1548981.4550	1936642.2230	589.70
GWA-15	1548766.1700	1936808.4740	591.56	1548765.2100	1936807.8670	588.37
GWA-16	1548592.7400	1937210.9880	582.55	1548592.0540	1937209.9470	579.58
GWC-19	1547892.8940	1936572.9730	579.83	1547893.7790	1936572.0390	576.90
GWC-4	1547898.3050	1935398.6960	580.65	1547899.6900	1935398.5510	577.73
GWC-6	1547843.9320	1934800.4510	581.63	1547845.1020	1934800.3890	578.55
GWC-8	1548167.1270	1934342.9370	579.99	1548167.2960	1934344.1910	577.13
HGWA-111	1548834.2570	1935222.8050	591.75	1548833.1050	1935222.9840	588.79
HGWA-112	1548885.6280	1935646.9960	596.27	1548884.5350	1935647.2640	593.46
HGWA-113	1548944.6240	1935990.0870	594.58	1548943.4750	1935990.3010	592.07
HGWC-101	1547725.4970	1936369.5810	578.85	1547726.4760	1936369.0200	575.91
HGWC-102	1547713.5040	1936033.3300	577.54	1547714.8560	1936033.7180	574.54
HGWC-103	1547848.8830	1935732.9610	580.79	1547850.1990	1935733.3030	577.76
HGWC-105	1547855.5570	1935110.3560	582.09	1547856.9860	1935110.3600	579.08
HGWC-107	1547909.9900	1934442.2410	579.31	1547911.2040	1934442.9490	576.43
HGWC-109	1548627.4120	1934362.7670	576.77	1548627.0470	1934361.5230	573.66
HGWC-117	1548100.7710	1937180.4260	581.98	1548099.5300	1937180.3100	579.31
HGWC-118	1547980.5610	1936946.3660	579.02	1547981.8380	1936946.8290	576.52
MW-12	1547853.7790	1937525.4620	583.27	1547855.2080	1937525.2430	580.59

Benchmark	Northing	Easting	Elevation
BM H-1	1547964.9650	1937219.0690	579.02

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING.

DATE OF FIELD SURVEY & INSPECTION: 05/04/2020-05/06/2020.

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 BENCHMARK BM H-1 SET BY

GEL SOLUTIONS USING A TRIMBLE DINI LEVEL.



Jimmy R. Toole

5/11/2020

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
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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



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9/10/2020

APPENDIX B

Well Inspection Forms

August 2020

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP4
 Permit Number _____
 Well ID GW4-15
 Date, field conditions 8/24/20 overcast 75°

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond APN
 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 vet 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 HGVA-112
 Date, field conditions 8-25-2020 vet

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-4
 Permit Number _____
 Well ID HGVA-113
 Date, field conditions 8-25-2020 Vet

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

7 Corrective actions as needed, by date:
Standing water when conditions are Vet.

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP4
 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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

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

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP4
 Permit Number _____
 Well ID H GWC-109
 Date, field conditions 3/29/2020 rainy

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP4
 Permit Number _____
 Well ID 11GWC-117
 Date, field conditions 8/27/2020 sunny

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-41
 Permit Number _____
 Well ID HGW-118
 Date, field conditions 8/26/2020, overcast, 80°F

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP4
 Permit Number _____
 Well ID GWC-4
 Date, field conditions 8/29/20 overcast 28°

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

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name McMinn AP4
 Permit Number _____
 Well ID GW4-14
 Date, field conditions overcast 8/24/20 75°

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hickman AP 4
 Permit Number _____
 Well ID GW 4-15
 Date, field conditions 8/24/20 overcast

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name PL Hammond AP4
 Permit Number _____
 Well ID GWA-16
 Date, field conditions 8/24/20, overcast 73°

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP4
 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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name 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

September 2020

Groundwater Monitoring Well Integrity Form

Site Name HAMMOND AD 4
 Permit Number _____
 Well ID ~~MW-47~~ HGW-4-47
 Date, field conditions 9:55, SUNNY

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

ND 10 ON EXTERNAL CASING

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 I.G.W.A-48D
 Date, field conditions 9/18/2020 80°F S(CADY)

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

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 HGWA 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 AD-4
 Permit Number _____
 Well ID HGW4-112
 Date, field conditions 9/18 sunny

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

7 Corrective actions as needed, by date: n/a

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name RAMOND AP4
 Permit Number _____
 Well ID HEWA-113
 Date, field conditions 9-22-20, 65°F SUNNY

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name HGWC-101 HAMMOND AP4
 Permit Number _____
 Well ID HGWC-101
 Date, field conditions 60°F, DRY

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

Signature and Seal of PE/PG responsible for inspection

D

Groundwater Monitoring Well Integrity Form

Site Name Hummer AP-4
Permit Number _____
Well ID HGWC 108
Date, field conditions 10/9

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection



Groundwater Monitoring Well Integrity Form

Site Name Hammond AP 41
Permit Number
Well ID HGWC-103
Date, field conditions 9/24 cool rainy

Table with 4 columns: Question, yes, no, n/a. Rows include sections: 1 Location/Identification, 2 Protective Casing, 3 Surface pad, 4 Internal casing, 5 Sampling: Groundwater Wells Only, 6 Based on your professional judgement...

7 Corrective actions as needed, by date:

Two horizontal lines for corrective actions.

Signature and Seal of PE/PG responsible for inspection

Horizontal line for signature.



Groundwater Monitoring Well Integrity Form

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

Table with 3 columns: yes, no, n/a. Rows include sections: 1 Location/Identification, 2 Protective Casing, 3 Surface pad, 4 Internal casing, 5 Sampling: Groundwater Wells Only, 6 Based on your professional judgement...

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name XXXXXXXXXX AP4
 Permit Number _____
 Well ID HGWL-107
 Date, field conditions 5/27/2014 RAINY

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

D. EPPAS ON THE 6/1/14

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 H6NCL-117
 Date, field conditions 9-25-2020, 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 Hammond / AP 4
 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:

None

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-4
 Permit Number _____
 Well ID GW-14
 Date, field conditions 9/11/11 Sunny, 22°C

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name McMinnond AP-4
 Permit Number _____
 Well ID GWA-16
 Date, field conditions 9/24 Sunny, clear

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

Signature and Seal of PE/PG responsible for inspection



Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-4
 Permit Number _____
 Well ID G-10C-4
 Date, field conditions 9/1/11 warm sunny

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

(17)

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

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

D

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

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection



Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-4
 Permit Number _____
 Well ID GW-19
 Date, field conditions 9/14 sunny

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2/AP4
 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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

March 2021

Groundwater Monitoring Well Integrity Form

Site Name Pleasant Hummon d
 Permit Number _____
 Well ID HCW 47
 Date, field conditions 3/10/21 40° 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 Plant Hammond 4D-4
 Permit Number _____
 Well ID HGW-4ED
 Date, field conditions 3/10/21, 40°, sunny

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID HGWA-14
 Date, field conditions 3/10/2021 6:50P sunny

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number _____
 Well ID HGW4112
 Date, field conditions 3/10/21, 70° 40° sunny

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammon J
 Permit Number _____
 Well ID 11GWA-113
 Date, field conditions 3/10/21 40° Sunny

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID NGW-101
 Date, field conditions 3/10/2021 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)?	/	—	—
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 HGW-107
 Date, field conditions 3/10/21 40° sunny

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-4
 Permit Number _____
 Well ID HGWC-103
 Date, field conditions 3/10/21 40° 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 Plant Hammond AP-4
 Permit Number _____
 Well ID HGWC-105
 Date, field conditions 3/10/21, 40°, 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 HGT Plant Hammond AP-4
 Permit Number _____
 Well ID 11GWC-107
 Date, field conditions 3/10/21 40°, Sunny

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-41
 Permit Number _____
 Well ID HGWC-109
 Date, field conditions 3/10/21 40°, 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 Plant Hammond
 Permit Number _____
 Well ID HGW-117
 Date, field conditions 3/10/21, 40°, 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 H&W Plant Hammond A-4
 Permit Number _____
 Well ID HGW-118
 Date, field conditions 3/10/21, 40°, 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 Plant Hammond
 Permit Number _____
 Well ID GW-4
 Date, field conditions 3/10/21, 40°, 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 Plant Hammond AP-4
 Permit Number _____
 Well ID GWC-6
 Date, field conditions 3/10/21 40°, sunny

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-4
 Permit Number _____
 Well ID GLW-8
 Date, field conditions 3/10/01 40° 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 Plant Hammond AP-4
 Permit Number _____
 Well ID GW4-14
 Date, field conditions 3110/21 4:00 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 Plant Hammond
 Permit Number _____
 Well ID GW-15
 Date, field conditions 3/10/11

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-4
 Permit Number _____
 Well ID GW4-16
 Date, field conditions 3/10/21 sunny, 40°

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-4
 Permit Number _____
 Well ID GWC-19
 Date, field conditions 3/10/21, 40°, 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 Plant Hammond AR4
 Permit Number _____
 Well ID mw-12
 Date, field conditions 3/10/21, sunny 70°

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

APPENDIX C

Laboratory Analytical and Field Sampling Reports

LABORATORY ANALYTICAL RESULTS

July 2020

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

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CERTIFICATIONS

Project: HAMMOND AP-4 BACKGROUND

Pace Project No.: 92487354

Pace Analytical Services Charlotte

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

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

Pace Analytical Services Asheville

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

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

Pace Analytical Services Peachtree Corners

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 BACKGROUND

Pace Project No.: 92487354

Lab Sample ID	Client Sample ID					
Method	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	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	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	2950947		2950948		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	120	1	1	118	126	-236	541	75-125	6	20 M1

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QUALITY CONTROL DATA

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

QC Batch: 555325 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result						
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BACKGROUND

Pace Project No.: 92487354

Parameter	Units	2949550		2949551		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92487388015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BACKGROUND

Pace Project No.: 92487354

QC Batch: 555226

Analysis Method: EPA 7470A

QC Batch 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	2949043		2949044		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0026	0.0025	103	99	75-125	4	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BACKGROUND

Pace Project No.: 92487354

QC Batch: 555676	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: 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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QUALITY CONTROL DATA

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

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

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2950811 2950812

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

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Face Analytical

Client Name: GA Power

WO#: **92487354**



Courier: Fed Ex UPS USPS Client Commercial Face Otr

Tracking #: _____

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

FIG. Name: _____

Packing Material: Bubble Wrap Bubble Bags None Other ziploc

Thermometer Used THR230 Type of Ice: Ice 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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7. <u>10 Day</u>
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>WT</u>	
All containers needing preservation have been checked	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

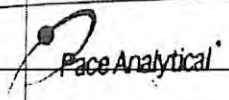
Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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



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

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

Project #

WO# : 92487354

PM: KLH1

Due Date: 08/05/20

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

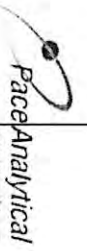
Matrix	Item#	BP40-125 mL Plastic Unpreserved (N/A) (Cl-)	BP30-250 mL Plastic Unpreserved (N/A)	BP20-500 mL Plastic Unpreserved (N/A)	BP10-1 liter Plastic Unpreserved (N/A)	BP45-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL 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)	
1																												
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

BPIN

pH Adjustment Log for Preserved Samples

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

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information	
Company	GA Power	Report To	SCS Contacts	Attention	Southern Co
Address	Atlanta, GA	Copy To	Geosyntec Contacts	Company Name	
Email To	SCS Contacts	Purchase Order No		Address	
Phone	SCS Contacts	Project Name	Plant Hammond AP-4 Background	Site Name	
Requested Due Date/Time	10 Day	Project Number	GW6581	Reference	Kevin Herring
				Material	
				Price Break #	2912-10

ITEM #	Valid Matrix Codes MATRIX CODE	Matrix Code (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES						Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab ID.	
				DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl					NaOH
1	HGWC-102	W1	G	7/21	1517	22	5	2	3									
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

ADDITIONAL COMMENTS		REINQUISHED BY/AFFILIATION		DATE	TIME	ACCEPTED BY/AFFILIATION		DATE	TIME	SAMPLE CONDITIONS	
Please note dry wells, sludge thorough dry wells not sampled and include when the last sample for the event has been taken.		SCS KNOB 1498		7/21/20	1715	Macklin Nelson/Johnson		7/21/19	1715	Temp in °C	25
		Macklin Nelson/Johnson		7/21/20	1450	K. N. Williams/Ad/Pace		7/21/20	1450	Received on Ice (Y/N)	Y
		AT 1P 2e		7-22-20	1450					Custody Sealed Cooler (Y/N)	N
										Samples Intact (Y/N)	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chris Russo

SIGNATURE of SAMPLER: Chris Russo

DATE Signed: 7/21/2020

(MM/DD/YY)

F-ALL-Q-020REV 07.15-F-CP-2007

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.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-4 BACKGROUND RAD5
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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

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ANALYTICAL RESULTS - RADIOCHEMISTRY

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

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BACKGROUND RADS

Pace Project No.: 92487351

QC Batch:	407104	Analysis Method:	EPA 9315
QC Batch 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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BACKGROUND RADS

Pace Project No.: 92487351

QC Batch: 407458

Analysis Method: EPA 9320

QC Batch 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

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 92487351

Face Analytical

Client Name: GA Power



92487351

Courier: Fed Ex UPS USPS Client Commercial Face Other

Proj. Due Date:
Proj. Name:

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other ziploc

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

Cooler Temperature 2.5
Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

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

Comments:

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

Client Notification/ Resolution:

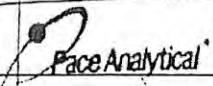
Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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



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

Document Issued: March 14, 2019
Page 1 of 1
Issuing Authority:
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#	BP40-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2SO3 (N/A)	VG9U-40 mL VOA Urp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	VJGK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	
	1																											
	2																											
	3																											
	4																											
	5																											
	6																											
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											

pH Adjustment Log for Preserved Samples

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

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



CHAIN-OF-CUSTODY / Analytical Request Document
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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	Geosynthetic Contacts	Company Name	
Email To	SCS Contacts	Purchaser Order No.		Address	
Phone		Project Name	Plant Hammond AP-4 Background	Rate Code	
Requested Due Date/TAT:	15 Day	Project Number	GW6581	Rate Project	Kevin Henning
				Rate Project #	2912-10
REGULATORY AGENCY			REGULATORY AGENCY		
NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/>			NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/>		
US1 <input type="checkbox"/> RCRA <input type="checkbox"/>			US1 <input type="checkbox"/> RCRA <input type="checkbox"/>		
Site Location STATE: GA			Site Location STATE: GA		

ITEM #	Section B Required Client Information	Valid Matrix Codes MATRIX CODE	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)			Residual Chlorine (Y/N)	
					DATE	TIME	DATE					TIME	Chloride, Fluoride, Sulfate	TDS		Metals 6010/6020*
1	HGWC-102	LA-Z, D-9 / -1 SAMPLE ID SAMPLE IDS MUST BE UNIQUE	INT G	G	7/21	1517		22	5	2	3	X	X	X	X	N
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																

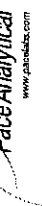
ADDITIONAL COMMENTS		REINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS	
Please note dry wells since through any wells not sampled and note when the last sample for the event has been taken.		GAIL KUDER / GCS		7/21/20		1715		Michael McPherson / GCS		7/21/20		1715		Temp in °C	
Metals: Sr As Bi Br B Cl Cr Co Cu Pb U Hg Mo Se Th		Melissa Markon / Geosynthetic		7/21/20		1140		K. McPherson / Pace		7/22/20		1411		Received on Ice (Y/N)	
		GAIL AL / Pace		7/22/20		1450		K. McPherson / Pace		7/22/20		1450		Custody Sealed Cooler (Y/N)	
														Samples Intact (Y/N)	

SAMPLER NAME AND SIGNATURE		PRINT Name of SAMPLER: Gail Kuders		DATE Signed: 7/21/2020	
		SIGNATURE of SAMPLER: Gail Kuders			

*Receiving 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



Analyst: Must Manually Enter All Fields Highlighted in Yellow.

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

Method Blank Assessment	
MB Sample ID	1970100
MB Concentration:	-0.004
MB 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
Count Date:	8/3/2020
Spike I.D.:	LCS55323
Decay Corrected Spike Concentration (pCi/mL):	19-033
Volume Used (mL):	24.046
Aliquot Volume (L, g, F):	0.10
Target Conc. (pCi/L, g, F):	0.510
Uncertainty (Calculated):	4.717
Result (pCi/L, g, F):	0.057
LCSD Counting Uncertainty (pCi/L, g, F):	5.001
Numerical Performance Indicator:	0.647
Percent Recovery:	106.02%
Status vs Numerical Indicator:	N/A
Upper % Recovery Limits:	Pass
Lower % Recovery Limits:	125%
	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS55323
Duplicate Sample I.D.:	LCS55323
Sample Result (pCi/L, g, F):	4.653
Sample Duplicate Result (pCi/L, g, F):	0.619
Sample Duplicate Result Counting Uncertainty (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
Duplicate Status vs Numerical Indicator:	6.51%
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

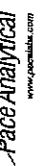
Comments:

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 Counting Uncertainty (pCi/L, g, F):			
Sample Matrix Spike Result:			
Sample Matrix Spike Duplicate Result:			
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):			
MS Numerical Performance Indicator:			
MSD Numerical Performance Indicator:			
MS Percent Recovery:			
MSD Percent Recovery:			
MS Status vs Numerical Indicator:			
MSD Status vs Numerical Indicator:			
MS Status vs Recovery:			
MSD Status vs Recovery:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			

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

AMS 8/3/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

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

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
LCSD55375	LCSD55375
Count Date:	8/7/2020
Spike ID.:	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
LCSD/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%

Duplicate Sample Assessment	
Sample ID.:	Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Duplicate Sample ID.:	
Sample Result (pCi/L, g, F):	
Sample Duplicate Result (pCi/L, g, F):	
Sample Result 2 Sigma CSU (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:	

Sample Matrix Spike Control Assessment	
Sample Collection Date:	MS/MSD 1 6/24/2020
Sample I.D.:	2015953007
Sample MS I.D.:	2015953011
Sample MSD I.D.:	2015953012
Spike I.D.:	MS/MSD 2 6/23/2020
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	39.462
Spike Volume Used in MS (mL):	0.20
Spike Volume Used in MSD (mL):	0.20
MS Aliquot (L, g, F):	0.801
MS Target Conc. (pCi/L, g, F):	9.855
MSD Aliquot (L, g, F):	0.809
MSD Target Conc. (pCi/L, g, F):	9.797
MS Spike Uncertainty (calculated):	0.475
MSD Spike Uncertainty (calculated):	0.478
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.342
Sample Matrix Spike Result:	0.416
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	8.737
Sample Matrix Spike Duplicate Result:	1.783
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	7.892
MS Numerical Performance Indicator:	1.817
MSD Numerical Performance Indicator:	-1.511
MS Percent Recovery:	-2.837
MSD Percent Recovery:	102.65%
MS Status vs Numerical Indicator:	74.56%
MSD Status vs Numerical Indicator:	Pass
MS Status vs Recovery:	Warning
MSD Status vs Recovery:	Pass
MS/MSD Upper % Recovery Limits:	135%
MS/MSD Lower % Recovery Limits:	60%

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	2015953007
Sample MS I.D.:	2015953011
Sample MSD I.D.:	2015953012
Spike I.D.:	10.335
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	2.118
Sample Matrix Spike Duplicate Result:	7.892
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.599
Duplicate Numerical Performance Indicator:	1.952
Duplicate Numerical Performance Indicator:	31.70%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

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

Comments:

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

Handwritten notes:
2020/10/18
7/28/2020
MS/MSD

Handwritten signature: J. K. ...

August 2020

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

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CERTIFICATIONS

Project: HAMMOND AP-4 SCAN/BKG 07

Pace Project No.: 92492563

Pace Analytical Services Charlotte

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

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

Pace Analytical Services Asheville

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

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

Pace Analytical Services Peachtree Corners

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SCAN/BKG 07

Pace Project No.: 92492563

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

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SCAN/BKG 07

Pace Project No.: 92492563

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
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

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SCAN/BKG 07

Pace Project No.: 92492563

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
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

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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

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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
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	6.70	Std. Units			1		09/01/20 07:51		
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6020 MET ICPMS

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

Antimony	ND	mg/L	0.0030	0.00028	1	08/27/20 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	
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300.0 IC Anions 28 Days

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

Fluoride	0.052J	mg/L	0.10	0.050	1		08/27/20 17:56	16984-48-8	
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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	

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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
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	5.95	Std. Units			1		09/01/20 07:51		
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6020 MET ICPMS

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

Antimony	ND	mg/L	0.0030	0.00028	1	08/27/20 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	
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300.0 IC Anions 28 Days

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

Fluoride	0.17	mg/L	0.10	0.050	1		08/27/20 18:26	16984-48-8	
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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	

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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	

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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			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	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		

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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			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA							
Antimony	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	

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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	

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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
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	5.82	Std. Units			1		09/01/20 07:51		
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6020 MET ICPMS

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

Antimony	ND	mg/L	0.0030	0.00028	1	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	
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300.0 IC Anions 28 Days

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

Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 22:25	16984-48-8	
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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	

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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
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	6.45	Std. Units			1		09/01/20 07:51		
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6020 MET ICPMS

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

Antimony	ND	mg/L	0.0030	0.00028	1	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	
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300.0 IC Anions 28 Days

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

Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 23:55	16984-48-8	
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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
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	6.64	Std. Units			1		09/01/20 07:51		
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6020 MET ICPMS

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

Antimony	ND	mg/L	0.0030	0.00028	1	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	
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300.0 IC Anions 28 Days

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

Fluoride	0.094J	mg/L	0.10	0.050	1		08/30/20 00:09	16984-48-8	
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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
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Field Data

Analytical Method:
Pace Analytical Services - Charlotte

pH	5.92	Std. Units			1		09/01/20 07:51		
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6020 MET ICPMS

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

Antimony	ND	mg/L	0.0030	0.00028	1	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	
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300.0 IC Anions 28 Days

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

Fluoride	ND	mg/L	0.10	0.050	1		08/30/20 00:24	16984-48-8	
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QUALITY CONTROL DATA

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

QC Batch: 562831 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92491917001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
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	

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QUALITY CONTROL DATA

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

Parameter	Units	2984657		2984658		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92491917001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
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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QUALITY CONTROL DATA

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

QC Batch: 563747 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92492563004	Spike Conc.	Spike Conc.	MS Result								
Antimony	mg/L	ND	0.1	0.1	0.10	0.095	100	95	75-125	5	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07

Pace Project No.: 92492563

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988644												2988645	
Parameter	Units	92492563004		MS	MSD	MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
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		

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REPORT OF LABORATORY ANALYSIS

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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	2987106		2987107		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92492563001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0024	93	94	75-125	1	20

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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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QUALITY CONTROL DATA

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

QC Batch: 562698 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 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	2984153		2984154		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.1	2.1	82	84	90-110	2	10 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2984155 2984156

Parameter	Units	2984155		2984156		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	105	107	90-110	1	10

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 563042 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 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	2985606		2985607		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
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	2985608		2985609		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
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

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QUALITY CONTROL DATA

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

QC Batch: 563290 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 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		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	1.1	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		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SCAN/BKG 07

Pace Project No.: 92492563

QC Batch: 563291 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Asheville
 Associated Lab Samples: 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		2986810		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	103	105	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986811 2986812

Parameter	Units	92493068007		2986812		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	95	97	90-110	2	10

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

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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		

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Sample Condition Upon Receipt

Client Name: G A Power WO#: 92492563

Courier: Fed Ex UPS USPS Client Commercial Pace Off



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: 5/26/2004

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

F-ALLC003rev.3, 11September2006



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: **Face**
 Requested Due Date/TIME: **10 Day**

Section B
 Project Information:
 Report To: **SCS Contacts**
 Project Name: **Plant Hammond AP-4 Scan/BKG 07**
 Project Number: **GW6581**

Section C
 Invoice Information:
 Attention: **Southern Co.**
 Company Name:
 Address:
 POC Name:
 POC Title:
 POC Phone #:
 POC Email #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER COM
 Site Location
 STATE: **GA**

ITEM #	Section D Required Client Information	Matrix Code (see veld codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives					Analysis Test			Residual Chlorine (Y/N)					
				DATE	TIME			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₅	Methanol	Other		Fluoride	App IV Metals 8020/7470'	RAD 226/228		
1	HGWA-111	WT G	WT G	8/27	11:30	36	4														
2	HGWA-112	WT G	WT G	8/27	11:30	36	4														
3	HGWA-113	WT G	WT G	8/27	11:30	36	4														
4	HGWC-101	WT G	WT G	8/27	11:30	36	4														
5	HGWC-103	WT G	WT G	8/27	11:30	36	4														
6	HGWC-105	WT G	WT G	8/27	11:30	36	4														
7	HGWC-107	WT G	WT G	8/27	11:30	36	4														
8	HGWC-109	WT G	WT G	8/27	11:30	36	4														
9	HGWC-117	WT G	WT G	8/27	11:30	36	4														
10	HGWC-118	WT G	WT G	8/27	11:30	36	4														
11																					
12																					

REQUISITIONED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
<i>Thomas Kossler</i>	8/27	11:05	<i>Thomas Kossler</i>	8/27	11:05	Temp in °C: 74 Received on Ice (Y/N): Y Custody Sealed Cooler (Y/N): N Samples Intact (Y/N): Y

Additional Comments:
 Please note of 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, CE, CO, PD, LI, HG, HQ, SO

Important Note: By signing this form you are accepting Pace's 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-02Inex.07, 15-Feb-2007

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

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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
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

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
92492559001	HGWA-111					
EPA 9315	Radium-226	0.176 ± 0.181 (0.352)	pCi/L		09/14/20 07:16	
EPA 9320	Radium-228	C:76% T:NA 0.394 ± 0.467 (0.986)	pCi/L		09/16/20 11:38	
Total Radium Calculation	Total Radium	C:61% T:80% 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)	pCi/L		09/14/20 07:29	
EPA 9320	Radium-228	C:90% T:NA -0.0563 ± 0.427 (1.00)	pCi/L		09/16/20 11:38	
Total Radium Calculation	Total Radium	C:57% T:85% 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)	pCi/L		09/14/20 07:11	
EPA 9320	Radium-228	C:85% T:NA 0.496 ± 0.459 (0.934)	pCi/L		09/16/20 11:38	
Total Radium Calculation	Total Radium	C:60% T:77% 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)	pCi/L		09/14/20 09:01	
EPA 9320	Radium-228	C:91% T:NA 0.932 ± 0.483 (0.833)	pCi/L		09/16/20 14:42	
Total Radium Calculation	Total Radium	C:62% T:82% 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	

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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)	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	C:95% T:NA 0.261 ± 0.415 (0.900)	pCi/L		09/15/20 15:02	
Total Radium Calculation	Total Radium	C:68% T:84% 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)	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	C:88% T:NA -0.415 ± 0.432 (1.09)	pCi/L		09/15/20 15:02	
Total Radium Calculation	Total Radium	C:61% T:79% 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)	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	C:85% T:NA 0.116 ± 0.373 (0.843)	pCi/L		09/15/20 15:03	
Total Radium Calculation	Total Radium	C:66% T:83% 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)	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	C:88% T:NA 0.711 ± 0.468 (0.897)	pCi/L		09/15/20 15:05	
Total Radium Calculation	Total Radium	C:70% T:85% 0.989 ± 0.597 (1.09)	pCi/L		09/16/20 10:12	

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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

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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	

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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	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
	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	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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	

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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

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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	Analysis Method:	EPA 9315
QC Batch 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.

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

QC Batch: 412342

Analysis Method: EPA 9320

QC Batch 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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

QC Batch: 412347

Analysis Method: EPA 9320

QC Batch 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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

QC Batch: 412358

Analysis Method: EPA 9315

QC Batch 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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

QC Batch:	412345	Analysis Method:	EPA 9320
QC Batch 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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

QC Batch: 412351

Analysis Method: EPA 9315

QC Batch 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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

QC Batch:	412352	Analysis Method:	EPA 9315
QC Batch 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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SCAN/BKG 07 RADS

Pace Project No.: 92492559

QC Batch:	412346	Analysis Method:	EPA 9320
QC Batch 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	

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SCAN/BKG 07 RAD5
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		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA Power

WO#: **92492559**



Courier: Fed Ex UPS USPS Client Commercial Pace Other

92492559

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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



Face Analytical
3140 Peachtree City, GA
770-447-1111

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Company: GA Power Address: Atlanta, GA		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosynthetic Contacts		Section C Invoice Information: Attention: Southern Co.	
Email To: SCS Contacts Phone: Fac Requested Date/Time: 10 Day		Purchase Order No.: Project Name: Plant Hammond AP-4 SCARBKG 07 Project Number: GW6581		Address: Plant Code: Plant Project: Plant Name: Plant Profile #:	
Company Name: Attention:		Company Name: Attention:		REGULATORY AGENCY <input type="checkbox"/> NPOES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER CCM	
Site Location STATE: GA		Requested Analysis Filtered (Y/N)			

ITEM #	Section D Required Client Information Valid Matrix Codes CODE WATER WASTE WATER PRODUCT OIL WASTE AIR OTHER TSS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test			Residual Chlorine (Y/N)		
				DATE	TIME			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Fluoride		App IV Metals 6020/7470*	PAD 226/228
1		HQWMA-444	WT G				1												
2		HQWMA-444	WT G				1												
3		HQWMA-448	WT G				1												
4		HQWMA-101	WT G	8/27	11:30		1												
5		HQWMA-103	WT G	8/27	13:14		1												
6		HQWMA-466	WT G				1												
7		HQWMA-107	WT G	8/27	17:30		1												
8		HQWMA-109	WT G				1												
9		HQWMA-117	WT G				1												
10		HQWMA-118	WT G				1												
11																			
12																			

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, CE, CO, PE, LI, HQ, MA, SE

REQUISITED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Thomas K. Leslie	8/27	19:00	Thomas K. Leslie	8/27	19:00	
Kevin Heming	8/27	11:05	Kevin Heming	8/27	12:05	
Kevin Heming	8/28	11:00	Kevin Heming	8/28	11:00	

Temp in °C: 14
 Received on Ice (Y/N): Y
 Custody Sealed Cooler (Y/N): N
 Samples Intact (Y/N): Y

*Important Note: By signing this form you are accepting Face's NF 30 day payment terms and agreeing to face charges of 1.5% per month for any invoices not paid within 30 days.

Face Analytical
3140 Peachtree City, GA
770-447-1111

F-ALL-C-020rev.07 15Feb-2007

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

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

Method Blank Assessment	
MB Sample ID	1994513
MB concentration:	0.056
MB 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	
LCSID (Y or N)?	N
LCS55958	LCS55958
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%

Duplicate Sample Assessment	
Sample I.D.:	92492363001
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
Duplicate RPD:	13.25%
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: Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator:		
MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): 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:

Checked by [Signature]

AM 9/10/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

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

Method Blank Assessment	
MB Sample ID	1994513
MB Concentration:	0.056
MB 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	
LCS# (Y or N)?	N
LCS55958	LCS055958
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):	4.638
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%

Duplicate Sample Assessment	
Sample I.D.:	92492363002
Duplicate Sample I.D.:	92492363002DUP
Sample Result (pCi/L, g, F):	1.477
Sample Duplicate Result (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
Duplicate RPD:	6.67%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

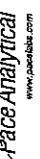
Comments:

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (pCi/L, g, F):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
MS Spike Uncertainty (calculated):	
MSD Spike Uncertainty (calculated):	
Sample Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Result:	
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 Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
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:	

Handwritten notes:
MDC
9/10/2020
LAL

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

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

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
	LCSS5959	9/11/2020
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	
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%	

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Sample I.D.:	92492559006
Duplicate Sample I.D.:	92492559006DUP
Sample Result (pCi/L, g, F):	0.288
Sample Duplicate Result (pCi/L, g, F):	0.138
Sample Duplicate Result Counting Uncertainty (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
Duplicate RPD:	128.44%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail
% RPD Limit:	25%

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

Comments:

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

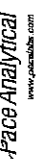
***Batch must be re-prepped due to unacceptable precision: N/A Wm 9/11/2020

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

Wm 9/11/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

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

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	LCS (Y or N)?	
	LCS55959	NCS055959
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%	

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	92492559007
Duplicate Sample I.D.:	92492559007/DUP
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
Duplicate RPD:	13.77%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

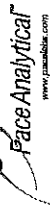
*The method blank result is below the reporting limit for this analysis and is acceptable.

Sample Matrix Spike Control Assessment	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:		
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):		
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:
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):
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:

AM9/11/2020

Quality Control Sample Performance Assessment



Analyst. Must Manually Enter All Fields. Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 9/11/2020
Worklist: 55960
Matrix: DW

MB Sample ID	1904515
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		LCS#	Y or N?	N
		LCSD55960		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%			

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
Sample I.D.:	92493016012	92493016012
Duplicate Sample I.D.:	92493016012DUP	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	
Duplicate RPD:	13.47%	
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:		

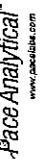
Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical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

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

Comments:

DMW 9/11/2020
WAM 9/14/2020

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		LCSID (Y or N)?	N
		LCS55960	LCS55960
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):	0.669		
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%		

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

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

Comments:

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

09/11/2020
9/14/2020
55960

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
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
		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%	

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	92492413011
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
Duplicate RPD:	29.70%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

***Batch must be re-prepared due to unacceptable precision: N/A
LAM 9/14/2020

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

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

Handwritten signature/initials

Quality Control Sample Performance Assessment



Analyst: Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
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	LCS# (Y or N)?		N
	LCS55961	LCS55961	
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):	4.385		
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%		

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	92492413010
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
Duplicate RPD:	50.74%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail
% RPD Limit:	25%

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

Comments:

***Spike must be re-accepted due to unacceptable precision. N/A

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 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:
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
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:

over 11/19/2020
9/14/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

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

Method Blank Assessment	
MB Sample ID	1984498
MB concentration:	0.550
MB 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		LCSID (Y or N)?	Y
Count Date:		LCS55953	9/15/2020
Spike I.D.:		20-030	38.396
Decay Corrected Spike Concentration (pCi/mL):		0.10	0.10
Volume Used (mL):		0.804	0.812
Aliquot Volume (L, g, F):		4.775	4.731
Target Conc. (pCi/L, g, F):		0.234	0.232
Uncertainty (Calculated):		4.305	4.600
Result (pCi/L, g, F):		1.011	1.072
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):		-0.89	-0.23
Numerical Performance Indicator:		90.15%	97.24%
Percent Recovery:		N/A	N/A
Status vs Numerical Indicator:		Pass	Pass
Upper % Recovery Limits:		135%	135%
Lower % Recovery Limits:		60%	60%

Duplicate Sample Assessment	
Sample I.D.:	LCS55953
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
Duplicate (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%

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

Comments:

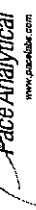
JH 9/16/20

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

Q. A. W. 29

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 9/16/2020
Worklist: 55954
Matrix: WT

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)?	
	LCSD55954	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:	80%	80%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCSD55954
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%

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

Comments:

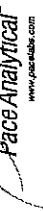
Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D.: Sample MS I.D.: Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L,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

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
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:

D. G. Keane

D. G. Keane

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 9/10/2020
Worklist: 55955
Matrix: WT

Method Blank Assessment	
MB Sample ID	1994501
MB concentration:	0.749
MB 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)?	
	LCSD55955	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
LCSD/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%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCSD55955
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
Duplicate (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%

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:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Result:
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
Duplicate (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.

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Quality Control Sample Performance Assessment



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
MB 2 Sigma CSU:	0.487
MB MDC:	1.054
MB Numerical Performance Indicator:	1.26
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS55956	Y
Count Date:	9/16/2020	LCS55956
Spike I.D.:	20-030	9/16/2020
Decay Corrected Spike Concentration (pCi/mL):	38.382	20-030
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%

Duplicate Sample Assessment	LCS55956	Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
Sample I.D.:	LCS55956	
Duplicate Sample I.D.:	LCS55956	
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%	

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

Comments:

9/17/20

Signature

September 2020

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

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CERTIFICATIONS

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
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

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
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	0.00099J	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	0.00095J	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

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL
 Pace Project No.: 92496524

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
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

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
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	CUSTOME			09/29/20 12:28	
		R				
	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	CUSTOME			09/29/20 12:28	
		R				
	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	CUSTOME			09/29/20 12:28	
		R				
	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

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92496524016	HGWC-118					
	Performed by	CUSTOME			09/29/20 13:39	
		R				
	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	

REPORT OF LABORATORY ANALYSIS

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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	

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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	

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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	

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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	

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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			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	09/24/20 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		

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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	

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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	

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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	

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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	

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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	0.00088J	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	

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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	

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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	0.00067J	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		

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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	

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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	

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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	

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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	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

QC Batch:	568426	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	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		3011667		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.							
Calcium	mg/L	2.8	1	3.6	1	85	71	75-125	4	20	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011668 3011669

Parameter	Units	92495870007		3011669		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.							
Calcium	mg/L	14.3	1	33.9	1	1960	2000	75-125	1	20	M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

QC Batch: 568748

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

Analysis Description: 6010D ATL

Laboratory: Pace Analytical Services - Peachtree Corners, GA

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

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569777 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A 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	3018391		3018392		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496914014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	36.9	1	1	39.2	39.8	237	295	75-125	1	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

QC Batch: 570301	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D ATL
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 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	3020966		3020967		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	38.6	1	37.8	39.0	-77	45	75-125	3	20	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

QC Batch: 570395

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

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	3021773		3021774		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	72.8	1	73.5	75.1	70	232	75-125	2	20	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568749 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

Parameter	Units	3013304		3013305		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92495894014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 569670 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92495894020 Result	Spike Conc.	Spike Conc.	Result							Result
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570006 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

Parameter	Units	3019446		3019447		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496914011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570088 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92496524010 Result	Spike Conc.	Spike Conc.	Result							Result
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	0.00088J	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

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570375 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 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	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92497125010 Result	Spike Conc.	Spike Conc.	Result							Result
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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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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 570626 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92496914020	Spike Conc.	Spike Conc.	Result							Result
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

QC Batch: 568007	Analysis Method: EPA 7470A
QC Batch 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	3009610		3009611		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0024	0.0025	95	99	75-125	4	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

QC Batch: 569307

Analysis Method: EPA 7470A

QC Batch 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	3016318		3016319		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0025	101	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

QC Batch:	568395	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: 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	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: 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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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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92496524

QC Batch:	570220	Analysis Method:	SM 2450C-2011
QC Batch Method:	SM 2450C-2011	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 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 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Asheville
 Associated Lab Samples: 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	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		9249656005	Result	Spike Conc.	Spike Conc.								
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	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496524001	Result	Spike Conc.	Spike Conc.								
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92496524

QC Batch: 568980 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 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	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496890001	Result	Spike Conc.	Spike Conc.								
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	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496895002	Result	Spike Conc.	Spike Conc.								
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 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 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	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497425005 Result	Spike Conc.	Spike Conc.	Result						
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	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497391003 Result	Spike Conc.	Spike Conc.	Result						
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 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 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	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497532015 Result	Spike Conc.	Spike Conc.	Result								
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	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495894027 Result	Spike Conc.	Spike Conc.	Result								
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 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 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		3017569		3017570		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
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		3017571		3017572		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
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 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 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		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	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		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	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 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 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	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495894028 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	542	50	50	583	587	82	89	90-110	1	10	M6	
Fluoride	mg/L	0.41	2.5	2.5	3.2	3.1	110	109	90-110	1	10		
Sulfate	mg/L	3480	50	50	3520	3530	86	111	90-110	0	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020271 3020272

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496914018 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	1.6	50	50	56.0	56.5	109	110	90-110	1	10		
Fluoride	mg/L	0.063J	2.5	2.5	2.8	2.8	109	111	90-110	2	10	M1	
Sulfate	mg/L	110	50	50	160	161	101	103	90-110	1	10		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 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.

REPORT OF LABORATORY ANALYSIS

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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

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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		

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Sample Condition Upon Receipt

Client Name: G A Power

WO#: **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: 9/21/2004

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

2 of 3

Page: 1 of 2

Section A Required Client Information		Section B Required Project Information		Section C Invoicing Information	
Company:	GA Power	Report To:	SCS Contacts	Attention:	Southern Co.
Address:	Atlanta, GA	Copy To:	Geosyntec Contacts	Company Name:	
Email To:	SCS Contacts	Purchase Order No.:		Address:	
Phone:	Fac	Project Name:	Plant Hammond AP-4 Semiannual/BKG 08	Pool Code:	
Requested Due Date/AT:	10 Day	Project Number:	GW5581	Reference Pool Project Manager:	Kevin Fleming
				Pool Profile #:	10839-440093-2-10
REGULATORY AGENCY			Requested Analysis Filtered (Y/N)		
<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER COR			Chloride, Fluoride, Sulfate N N N N TDS N N N N Full App. III & IV Metals 8010/8020 N N N N RAD 226/228 N N N N		
Site Location STATE: GA			Residual Chlorine (Y/N)		

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
				DATE	TIME									
1	HSMG-482	WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
2	MW-47	WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
3	MW-48D	WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
4	FB-04	WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
5		WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
6		WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
7		WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
8		WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
9		WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
10		WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
11		WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X
12		WT	G	09-18-20	11:20	22	5	2	3	X	X	X	X	X

Section D
Additional Comments

RELEASING BY / AFFILIATION: USKISH TALKOR / SEMINOLE
 DATE: 09-18-20
 TIME: 14:15

ACCEPTED BY / AFFILIATION: Chad R. [Signature] / GAO
 DATE: 9/18/20
 TIME: 16:45

RELEASING BY / AFFILIATION: [Signature] / GAO
 DATE: 9/21/20
 TIME: 09:25

ACCEPTED BY / AFFILIATION: [Signature] / GAO
 DATE: 9/24/20
 TIME: 09:25

RELEASING BY / AFFILIATION: [Signature] / GAO
 DATE: 9/21/20
 TIME: 12:00

ACCEPTED BY / AFFILIATION: [Signature] / GAO
 DATE: 9/21/20
 TIME: 12:00

Temp in °C: 36.7

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): N

Samples Intact (Y/N): Y

*Important Note: By signing this form you are accepting Face'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-FALL-Q-020rev.07, 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A

Section B

Section C

Required Client Information:	Company: GA Power	Report To: SCS Contacts	Attention: Southern Co.
Address: Atlanta, GA	Copy To: Geosynlec Contacts	Invoice Information	
Email to: SCS Contacts / <i>anukus@gepower.com</i>	Purchase Order No. 1255	Corr party Name	
Phone: 770 820 6838	Project Name: Plant Hammond AP-4 Semannual/BKG 08	Address: <i>1255 PACETS RD NW, SUITE 200, LAWRENCE, GA 30046</i>	
Requested Date Date/TIME: 10 Day	Project Number: GW6581	Price Quote Reference Project Manager: Kevin Herring	
		Price Profile #: 10839-12	
		REGULATORY AGENCY	
		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	
		<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER CCR	
		Site Location STATE: GA	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)		Residual Chlorine (Y/N)	pH	pH =	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
					DATE	TIME					DATE	TIME								Chloride, Fluoride, Sulfate
1	HQMA-111	WTF G																		
2	HQMA-112	WTF G																		
3	HQMA-113	WTF G	9-22-20	11:50			23	5	2	3										
4	HQWG-101	WTF G																		
5	HQWG-102	WTF G																		
6	HQWG-105	WTF G																		
7	HQWG-107	WTF G																		
8	HQWG-109	WTF G																		
9	HQWG-112	WTF G																		
10	HQWG-118	WTF G																		
11	FB-04	WTF G																		
12	HQMA-115 FILTERED	WTF G	9-22-20	12:45			23	5	2	3										

Section D
Required Client Information

Valid Matrix Codes
MATRIX CODE

DRINKING WATER DW
WATER WT
WASTE WATER WW
PRODUCT P
OIL OI
WIRE WP
AIR AR
OTHER OT
TS

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

TIME

DATE

TIME

SAMPLE TEMP AT COLLECTION

OF CONTAINERS

Unpreserved
H₂SO₄
HNO₃
HCl
NaOH
Na₂S₂O₃
Methanol
Other

Analysis Test

Chloride, Fluoride, Sulfate

TDS

App III & IV Metals 6010/6020*

RAD 226/228

Requested Analysis Filtered (Y/N)

Residual Chlorine (Y/N)

pH

pH =

Temp in °C

Received on Ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER CCR

Site Location STATE: GA

PRINT Name of SAMPLER: *NIKESH THURAI*

SIGNATURE of SAMPLER: *[Signature]*

DATE Signed (MM/DD/YYYY): 9-22-20

Page: 1 of 1

Additional Comments: *REINQUISHED BY / AFFILIATION*

Accepted by / Affiliation: *NIKESH THURAI*

Date: 9/22/20

Time: 1750

Temp in °C: 18.55

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): N

Samples Intact (Y/N): Y

Face Project No./Lab ID: *62496524*

Important Note: By signing this form you are accepting Face'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



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: SCS Contacts
 Requested Due Date/RAT: to day

Section B Required Project Information:
 Report To: SCS Contacts
 Copy To: Geosyntec Contacts
 Purchase Order No.:
 Project Name: Plant Hammond
 Project Number: GW6581

Section C Invoice Information:
 Attention: Southern Co.
 Company Name:
 Address:
 Reference: Kevin Herring
 Pace Project Manager
 Pace Profile #: 10839-12

Page: 1 of 1

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER COR

Site Location
 STATE: GA

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DW WT WW P SL OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH =			
														COLLECTED	DATE	TIME
1	HGWA-111	DW	WT	G				5								
2	HGWA-112	WT	G					5								
3	HGWA-113	WT	G					5								
4	HGWA-101	WT	G					5								
5	HGWA-103	WT	G					5								
6	HGWA-105	WT	G					5								
7	HGWA-107	WT	G					5								
8	HGWA-109	WT	G	9/15	1630	14		5								
9	HGWA-117	WT	G					5								
10	HGWA-118	WT	G					5								
11	HGWA-119	WT	G					5								
12	FD-04	WT	G					5								

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= As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li

RELINQUISHED BY / AFFILIATION
 Thomas Kessler / Pace
 Date: 9/25
 Time: 1720

ACCEPTED BY / AFFILIATION
 Nelson Anderson / Pace
 Date: 9/25
 Time: 2030

SAMPLER NAME AND SIGNATURE
 Thomas Kessler
 Nelson Anderson

PRINT Name of SAMPLER: Thomas Kessler
SIGNATURE of SAMPLER: [Signature]
DATE Signed (MM/DD/YYYY): 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 rate changes of 1.5% per month for any invoices not paid within 30 days.

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

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

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: HAMMOND AP-4 SEMIANNUAL RAD5
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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92496518

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92496518014	HGWC-109	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
92496518015	HGWC-117	Total Radium Calculation	JAL	1	PASI-PA
		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
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS
 Pace Project No.: 92496518

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92496518001						
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						
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						
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						
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

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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

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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

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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)	pCi/L		10/15/20 07:05	
EPA 9320	Radium-228	C:88% T:NA 0.221 ± 0.413 (0.905)	pCi/L		10/15/20 11:31	
Total Radium Calculation	Total Radium	C:72% T:79% 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)	pCi/L		10/15/20 07:07	
EPA 9320	Radium-228	C:82% T:NA 0.322 ± 0.451 (0.968)	pCi/L		10/15/20 11:12	
Total Radium Calculation	Total Radium	C:71% T:80% 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)	pCi/L		10/15/20 07:32	
EPA 9320	Radium-228	C:87% T:NA 0.0637 ± 0.424 (0.967)	pCi/L		10/15/20 11:12	
Total Radium Calculation	Total Radium	C:68% T:81% 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)	pCi/L		10/15/20 07:06	
EPA 9320	Radium-228	C:86% T:NA 0.385 ± 0.408 (0.850)	pCi/L		10/15/20 11:14	
Total Radium Calculation	Total Radium	C:70% T:85% 0.613 ± 0.667 (1.38)	pCi/L		10/20/20 10:07	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92496518

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92496518

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92496518

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
	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	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92496518

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
	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	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92496518

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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	

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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	

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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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92496518

QC Batch: 417134

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 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	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92496518

QC Batch:	417135	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 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	

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

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QUALIFIERS

Project: 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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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

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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		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA Power

WO#: **92496518**



Proj. Name: _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

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

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 9/21/2006

Comments: _____

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

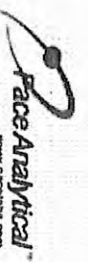
Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information Company: GA Power Address: Atlanta, GA		Section B Required Project Information Report to: SCS Contacts Copy To: Geosynlec Contacts		Section C Invoicing Information Attention: Southern Co. Company Name: Southern Co.	
Email To: SCS Contacts		Purchase Order No:		Address:	
Phone:		Project Name: Plant Hammond AP-4 Semiannual/BKG 08		Parcel Date:	
Requested Due Date/TAT: 10 Day		Project Number: GW6581		Parcel Project Reference: Kevin Henning	
				Parcel Project Manager: Kevin Henning	
				Parcel Project Price Quote #: 10839-446839-2 (U)	
				Site Location: GA	
				STATE: GA	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
				DATE	TIME	DATE	TIME											Unpreserved
1	H2WG-402	WT G	G	9/18	11:00	-	-	5	3	X	X	X	X	X	X	X	X	X
2	MW-27	WT G	G	9/18	11:00	-	-	5	2	X	X	X	X	X	X	X	X	X
3	MW-48D	WT G	G	9/18	16:40	-	-	5	2	X	X	X	X	X	X	X	X	X
4	FB-04	WT G	G	9/18	16:40	-	-	5	2	X	X	X	X	X	X	X	X	X
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Section A: Relinquished By / Affiliation: Chad Russo, Date: 9/18/20, Time: 19:20

Section B: Accepted By / Affiliation: Nicholas M. Johnson, Date: 9/21/20, Time: 09:25

Section C: Relinquished By / Affiliation: D. W. Par, Date: 9/21/20, Time: 12:08

Section D: Accepted By / Affiliation: Nicholas M. Johnson, Date: 9/21/20, Time: 19:20

Section E: Relinquished By / Affiliation: D. W. Par, Date: 9/21/20, Time: 12:08

Section F: Accepted By / Affiliation: Nicholas M. Johnson, Date: 9/21/20, Time: 19:20

Temp in °C: 36.2

Received on Ice (Y/N): X

Custody Sealed Cooler (Y/N): X

Samples Intact (Y/N): X

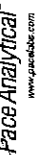
Temp in °C: 36.2

Received on Ice (Y/N): X

Custody Sealed Cooler (Y/N): X

Samples Intact (Y/N): X

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 9/29/2020
Worklist: 56348
Matrix: DW

Method Blank Assessment	
MB Sample ID	2008974
MB concentration:	0.298
MB 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		LCS (Y or N)?	Y
Count Date:	9/30/2020	LCS56348	19-033
Spike I.D.:	19-033		24.044
Decay Corrected Spike Concentration (pCi/mL):	0.10		0.513
Volume Used (mL):	0.506		4.988
Aliquot Volume (L, g, F):	4.749		0.056
Target Conc. (pCi/L, g, F):	0.057		4.064
Uncertainty (Calculated):	4.576		0.714
Result (pCi/L, g, F):	0.754		-1.71
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	-0.45		86.68%
Numerical Performance Indicator:	96.35%		N/A
Status vs Numerical Indicator:	N/A		Pass
Percent Recovery:	Pass		125%
Status vs Recovery:	Pass		75%
Upper % Recovery Limits:	125%		
Lower % Recovery Limits:	75%		

Duplicate Sample Assessment		LCS (Y or N)?	Y
Sample I.D.:	LCS56348		
Duplicate Sample I.D.:	LCS56348		
Sample Result Counting Uncertainty (pCi/L, g, F):	4.576		
Sample Duplicate Result (pCi/L, g, F):	0.754		
Sample Duplicate Result Counting Uncertainty (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%		

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

Comments:

Qm10/1/2020
LAM 10/1/2020

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.:		
Sample I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result 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 Spiker/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 10/13/2020
Worklist: 56591
Matrix: DW

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)?	
	LCSD56591	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):	4.897	4.711
Uncertainty (Calculated):	0.056	0.057
Result (pCi/L, g, F):	4.666	4.350
LCSD/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	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Sample I.D.:	LCSD56591
Duplicate Sample I.D.:	LCSD56591
Sample Result (pCi/L, g, F):	4.666
Sample Duplicate Result (pCi/L, g, F):	0.761
Sample Duplicate Counting Uncertainty (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
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	7.29%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

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:		
Sample 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:
Sample Matrix Spike Duplicate Result:
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample 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:

van 10/14/zero

Handwritten signature

Quality Control Sample Performance Assessment



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	2016617
MB Concentration:	0.280
MB 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)?	
	LCSD56591	LCSD56591
Count Date:	10/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.512	
Target Conc. (pCi/L, g, F):	4.697	
Uncertainty (Calculated):	0.056	
Result (pCi/L, g, F):	4.666	
LCSD Counting Uncertainty (pCi/L, g, F):	0.761	
Numerical Performance Indicator:	-0.08	
Percent Recovery:	99.33%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Duplicate Sample Assessment	
Sample I.D.:	92496904020
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
Duplicate RPD:	16.61%
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 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: Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/ MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

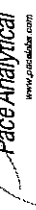
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Handwritten notes:
 92496904020
 92496904020DUP
 92496904020

Handwritten note:
 Nam 10/14/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 10/14/2020
Worklist: 56593
Matrix: DW

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	LCS056593
Count Date:	10/15/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.508
Target Conc. (pCi/L, g, F):	4.737
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
Upper % Recovery Limits:	Pass
Lower % Recovery Limits:	125%
	75%

Duplicate Sample Assessment	
Sample I.D.:	92495887027
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
Duplicate RPD:	-27.96%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

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 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: Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
 Analyst: VAL
 Date: 9/29/2020
 Worklist: 56349
 Matrix: WT



Method Blank Assessment	MB Sample ID	Count Date	Y
MB concentration:	2008975	10/7/2020	LCS056349
MB 2 Sigma CSU:	0.857	20-030	10/7/2020
MB MDC:	0.536	38.119	38.119
MB Numerical Performance Indicator:	1.016	0.10	0.10
MB Status vs Numerical Indicator:	3.14	0.804	0.804
MB Status vs MDC:	Fail*	4.670	4.742
	Pass	0.229	0.232
		4.366	5.332
		1.021	1.251
		-0.57	0.91
		93.48%	112.43%
		Pass	N/A
		135%	135%
		60%	60%

Laboratory Control Sample Assessment	LCSID (Y or N)?	Y
Count Date:	LCS056349	10/7/2020
Spike I.D.:	20-030	38.119
Decay Corrected Spike Concentration (pCi/mL):	0.10	0.10
Volume Used (mL):	0.804	0.804
Aliquot Volume (L, g, F):	4.670	4.742
Target Conc. (pCi/L, g, F):	0.229	0.232
Uncertainty (Calculated):	4.366	5.332
Result (pCi/L, g, F):	1.021	1.251
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	-0.57	0.91
Numerical Performance Indicator:	93.48%	112.43%
Percent Recovery:	N/A	N/A
Status vs Numerical Indicator:	Pass	Pass
Status vs Recovery:	135%	135%
Upper % Recovery Limits:	60%	60%
Lower % Recovery Limits:		

Duplicate Sample Assessment	LCSID	Y
Sample I.D.:	LCS056349	10/7/2020
Duplicate Sample I.D.:	LCS056349	38.119
Sample Result (pCi/L, g, F):	4.366	0.10
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.021	0.804
Sample Duplicate Result (pCi/L, g, F):	5.332	4.670
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.251	0.229
Are sample and/or duplicate results below RL?	NO	4.366
Duplicate Numerical Performance Indicator:	-1.172	1.021
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	18.40%	-0.57
Duplicate Status vs Numerical Indicator:	Pass	93.48%
Duplicate Status vs RPD:	Pass	112.43%
% RPD Limit:	36%	N/A

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

Comments:

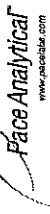
*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

Handwritten notes:
 15/11/20
 110-8-2020

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: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator:		
MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): 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:

Quality Control Sample Performance Assessment



Test: Ra-228
Analyst: VAL
Date: 10/16/2020
Worklist: 56592
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment

MB Sample ID
MB concentration:
MB 2 Sigma CSU:
MB MDC:
MB Numerical Performance Indicator:
MB Status vs Numerical Indicator:
MB Status vs. MDC:

Laboratory Control Sample Assessment		LCS#	(Y or N)?	Y
Count Date:	10/19/2020	LCS#56592		LCS#56592
Spike I.D.:	20-030			10/19/2020
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
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	4.645			4.409
Numerical Performance Indicator:	1.050			1.018
Percent Recovery:	-0.04			-0.25
Status vs Numerical Indicator:	99.48%			97.08%
Upper % Recovery Limits:	N/A			N/A
Lower % Recovery Limits:	Pass			Pass
	135%			135%
	80%			80%

Duplicate Sample Assessment

Sample I.D.:
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?
Duplicate Numerical Performance Indicator:
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:
Duplicate Status vs Numerical Indicator:
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

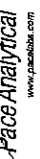
Sample Matrix Spike Control Assessment

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

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
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:

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56592
Matrix: WT

Method Blank Assessment	
MB Sample ID	2016818
MB concentration:	0.274
MB 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	LCS/D (Y or N)?	
	LCS56592	Y
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):	0.836	0.836
Target Conc. (pCi/L, g, F):	4.576	4.548
Uncertainty (Calculated):	0.223	0.223
Result (pCi/L, g, F):	2.226	2.963
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	-7.18	0.764
Numerical Performance Indicator:	47.60%	-3.91
Percent Recovery:	Fail**	65.14%
Status vs Numerical Indicator:	Fail Low**	N/A
Status vs Recovery:	135%	Pass
Upper % Recovery Limits:	60%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	LCS/D (Y or N)?	Y
Sample I.D.:	LCS56592	
Duplicate Sample I.D.:	LCS56592	
Sample Result (pCi/L, g, F):	2.226	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.529	
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%	

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 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

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

Manual

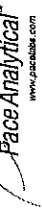
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

**Batch must be re-prepped due to LCS failure.

10/13/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56594
Matrix: WT

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 Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSID (Y or N)?	Y
Count Date:		LCS56594	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	0.815
Aliquot Volume (L, g, F):		4.674	4.667
Target Conc. (pCi/L, g, F):		3.852	4.892
Uncertainty (Calculated):		0.918	1.152
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):		-1.49	0.38
Numerical Performance Indicator:		94.57%	104.82%
Percent Recovery:		N/A	N/A
Status vs Numerical Indicator:		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): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result: 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	LCSID (Y or N)?	Y
Sample I.D.: 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? Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator: Duplicate RPD: Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD: % RPD Limit:	LCS56594	10/15/2020
	3.952	38.018
	0.918	0.815
	4.892	4.667
	1.152	1.152
	NO	NO
	-1.250	-1.250
	21.38%	21.38%
	Pass	Pass
	36%	60%

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
Sample I.D. Sample MS I.D. Sample MSD I.D. Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator: Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:		

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

Comments:

Handwritten signature and date: 10/16/20

Handwritten signature and date: CME 10/16/20

November 2020

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

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CERTIFICATIONS

Project: HAMMOND AP-4 BKG 02

Pace Project No.: 92505478

Pace Analytical Services Charlotte

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

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

Pace Analytical Services Asheville

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

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

Pace Analytical Services Peachtree Corners

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92505478001	HGWA-47					
	Performed by	CUSTOME			11/11/20 17:42	
		R				
	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	CUSTOME			11/13/20 11:10	
		R				
	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	

REPORT OF LABORATORY ANALYSIS

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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

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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			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	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		

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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	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02

Pace Project No.: 92505478

QC Batch: 580529

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

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	3070804		3070805		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	9170 ug/L	1	1	173	169	16300	16000	75-125	2	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02

Pace Project No.: 92505478

QC Batch: 580692

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

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	3071705		3071706		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	73.3	1	75.0	73.5	172	17	75-125	2	20	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02

Pace Project No.: 92505478

QC Batch: 581313

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

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	3074653		3074654		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	133	1	1	130	129	-299	-430	75-125	1	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 581474 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505482033 Result	Spike Conc.	Spike Conc.	Result						
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02

Pace Project No.: 92505478

Parameter	Units	3075461		3075462		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505482033 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580637	Analysis Method: EPA 7470A
QC Batch 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	3071456		3071457		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02

Pace Project No.: 92505478

QC Batch: 580276	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: 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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580910	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92505478003	Laboratory: Pace Analytical Services - Peachtree Corners, GA

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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02

Pace Project No.: 92505478

QC Batch: 580949	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: 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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02

Pace Project No.: 92505478

QC Batch: 580375	Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993	Analysis Description: 300.0 IC Anions
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 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		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	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		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	2.7	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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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 02
Pace Project No.: 92505478

QC Batch: 580771 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 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		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	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		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	2.2	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		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
Upon Receipt

Client Name:

G A Power

Project #:

WO#: 92505478

Courier: Commercial Fed Ex UPS USPS Other: Client

Custody Seal Present? Yes No Seals Intact? Yes No

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer: Gun ID: 230 Type of Ice: Wet Blue None

Cooler Temp: 3.6°C Correction Factor: Add/Subtract (°C) 0

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

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No



92505478

Date/Initials Person Examining Contents: 11/11/20

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Includes Date/Time/ID/Analysis Matrix: <u>W</u>	9. <u>FB-01 is labeled EB-01 11/11/20 @ 1610</u>
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted:

Date/Time:

Project Manager SCUR Review:

Date:

Project Manager SRF Review:

Date:



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		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosyntec Contacts		Section C Invoice Information: Attention: Southern Co. Company Name:	
Email To: SCS Contacts Phone:		Purchase Order No.: Project Name: Plant Hammond AP-4 BKS 02 Project Number: GW6581		Address: State Guide: Reference: Plant Project: Manager: Piece Order #: 10839-4	
Requested Due Date/TIME: 19 Day		Requested Analysis Filtered (Y/N)		REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
Requested Due Date/TIME: 19 Day		State Location: GA		STATE: GA	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH	pH = 7.40	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
				DATE	TIME	DATE													TIME
1	HQWA-47	WT G	G					5	2	3									
2	HQWA-48D	WT G	G	11/12/20	10:30		24	5	2	3									
3	FB-01	WT G	G					5	2	3									
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

ADDITIONAL COMMENTS

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

Full App. III & IV Metals: So, 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 SDOs

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Shawn Liu / Geosyntec	11/12/20	1701	Shawn Liu / Geosyntec	11/11/20	1701	
Thomas Kuehl / GSC	11/12	1402	Thomas Kuehl / GSC	11/12	1402	
Thomas Kuehl / GSC	11/12	1402	Thomas Kuehl / GSC	11/12/20	1402	

SAAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Shawn Liu

SIGNATURE of SAMPLER: *Shawn Liu*

DATE Signed (MM/DD/YYYY): 11/11/20

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

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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)	pCi/L		12/01/20 07:20	
EPA 9320	Radium-228	C:84% T:NA -0.0179 ± 0.344 (0.805)	pCi/L		12/03/20 11:12	
Total Radium Calculation	Total Radium	C:76% T:86% 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)	pCi/L		12/01/20 07:46	
EPA 9320	Radium-228	C:78% T:NA -0.184 ± 0.389 (0.935)	pCi/L		12/03/20 11:11	
Total Radium Calculation	Total Radium	C:74% T:80% 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)	pCi/L		12/01/20 07:46	
EPA 9320	Radium-228	C:78% T:NA 0.760 ± 0.486 (0.932)	pCi/L		11/30/20 11:54	
Total Radium Calculation	Total Radium	C:69% T:86% 0.776 ± 0.695 (1.49)	pCi/L		12/07/20 11:09	

REPORT OF LABORATORY ANALYSIS

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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

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS

Pace Project No.: 92505469

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS

Pace Project No.: 92505469

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
	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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS

Pace Project No.: 92505469

QC Batch: 425257	Analysis Method: EPA 9315
QC Batch 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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS

Pace Project No.: 92505469

QC Batch: 423681

Analysis Method: EPA 9315

QC Batch 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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS

Pace Project No.: 92505469

QC Batch: 424420

Analysis Method: EPA 9320

QC Batch 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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 02 RADS

Pace Project No.: 92505469

QC Batch: 423745

Analysis Method: EPA 9320

QC Batch 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	

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

GAPower

Project #: **WO# : 92505469**

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



Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *11/11/20*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?
 Yes No N/A

Thermometer: Gun ID: *230* Type of Ice: Wet Blue None

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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	<i>FB-01 is labeled EB-01 11/11/20 @ FB10</i>
-Includes Date/Time/ID/Analysis Matrix:	<i>W</i>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No. :
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 North Carolina Quality Office

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

Project #

WO# : 92505469

PM: KLH1

Due Date: 12/04/20

CLIENT: GA-GA Power

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

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

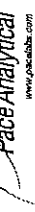
Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGJU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

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

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
 Analyst: JJY
 Date: 12/3/2020
 Worklist: 57639
 Matrix: DW

Method Blank Assessment	2055115
MB Sample ID	2055115
MB Concentration:	-0.058
MB 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	LCS/D (Y or N)?	
	LCS57639	Y
Count Date:	12/4/2020	LCS57639
Spike I.D.:	19-033	12/4/2020
Decay Corrected Spike Concentration (pCi/mL):	24.042	19-033
Volume Used (mL):	0.10	24.042
Aliquot Volume (L, g, F):	0.506	0.10
Target Conc. (pCi/L, g, F):	4.751	0.507
Uncertainty (Calculated):	0.057	4.743
Result (pCi/L, g, F):	5.488	0.057
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.884	4.865
Numerical Performance Indicator:	1.53	0.813
Percent Recovery:	115.51%	0.29
Status vs Numerical Indicator:	N/A	102.56%
Upper % Recovery Limits:	Pass	Pass
Lower % Recovery Limits:	125%	125%

Duplicate Sample Assessment	LCS/D (Y or N)?	
	LCS57639	Y
Sample I.D.:	LCS57639	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCS57639	
Sample Result (pCi/L, g, F):	5.488	
Sample Duplicate Result (pCi/L, g, F):	0.884	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.865	
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%	

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

Comments:

Handwritten signature/initials

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:		
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Sample Matrix Spike Duplicate Result:
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
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:

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: JJY
Date: 11/30/2020
Worklist: 57449
Matrix: DW

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
Count Date:	12/1/2020	LCSD57449	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):	0.515		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
LCSD/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%

Duplicate Sample Assessment		LCSD (Y or N)?	Y
Sample I.D.:	LCSD57449		
Duplicate Sample I.D.:	LCSD57449		
Sample Result (pCi/L, g, F):	5.057		
Sample Duplicate Result (pCi/L, g, F):	0.815		
Sample Duplicate Result Counting Uncertainty (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 LCSD/LCSD Percent Recoveries) Duplicate RPD:	16.19%		
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Pass		
% RPD Limit:	25%		

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

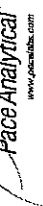
Comments:

*JD
12-1-20*

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

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

Quality Control Sample Performance Assessment



Analyt Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: JJY
Date: 11/30/2020
Worklist: 57449
Matrix: DW

Method Blank Assessment	
MB Sample ID	2048181
MB concentration:	0.309
MB 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	
Count Date:	12/1/2020
Spikes I.D.:	LC557449
Decay Corrected Spike Concentration (pCi/mL):	19.033
Volume Used (mL):	24.042
Aliquot Volume (L, g, F):	0.10
Target Conc. (pCi/L, g, F):	0.516
Uncertainty (Calculated):	4.655
Result (pCi/L, g, F):	0.056
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	5.057
Numerical Performance Indicator:	0.815
Percent Recovery:	0.96
Status vs Numerical Indicator:	108.63%
Status vs Recovery:	N/A
Upper % Recovery Limits:	Pass
Lower % Recovery Limits:	125%
	75%

Duplicate Sample Assessment	
Sample I.D.:	92505462001
Duplicate Sample I.D.:	92505462001DUP
Sample Result (pCi/L, g, F):	0.150
Sample Duplicate Result (pCi/L, g, F):	0.246
Sample Duplicate Result (pCi/L, g, F):	0.399
Sample Duplicate Result (pCi/L, g, F):	0.289
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	-1.282
Duplicate RPD:	90.57%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail
% RPD Limit:	25%

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

Comments:

~~Batch must be re-prepped due to unacceptable precision~~ - DNPI < 3
JJY 11/30

Sample Matrix Spike Control Assessment	
Sample Collection Date:	Sample I.D.:
Sample MS I.D.:	Sample MS I.D.:
Sample MSD I.D.:	Sample MSD I.D.:
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	MS/MSD 1
Spike Volume Used in MS (mL):	MS/MSD 2
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 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 I.D.:
Sample MS I.D.:	Sample MS I.D.:
Sample MSD I.D.:	Sample MSD I.D.:
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:	Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	Duplicate Numerical Performance Indicator:
Duplicate Numerical Performance Indicator:	(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:	MS/MSD Duplicate Status vs RPD:
MS/MSD Duplicate Status vs RPD:	% RPD Limit:

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 11/25/2020
Worklist: 57465
Matrix: WT



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
Count Date:	12/3/2020	LCSD57465	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):	0.826		0.826
Target Conc. (pCi/L, g, F):	4.546		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):	0.962		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%

Duplicate Sample Assessment	
Sample I.D.:	LCSS7465
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%

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

Comments:

Handwritten signature and date: 12-4-20

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

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

December 2020

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.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-4 BKG 03

Pace Project No.: 92512587

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92512587001	HGWA-47					
	Performed by	CUSTOME			01/04/21 15:37	
		R				
	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	CUSTOME			01/04/21 15:37	
		R				
	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	

REPORT OF LABORATORY ANALYSIS

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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

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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

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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			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	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		

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

QC Batch: 589396 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A 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	3113411		3113412		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92512572002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
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.

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

QC Batch: 589337 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A 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		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.099	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

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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	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
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		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03

Pace Project No.: 92512587

QC Batch: 588542	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 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	3109731		3109732		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0022	0.0023	89	90	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03

Pace Project No.: 92512587

QC Batch: 588373	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: 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	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 03
Pace Project No.: 92512587

QC Batch: 589104 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 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		3112054		3112055		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	409	409	50	50	471	456	125	94	90-110	3	10	M6
Fluoride	mg/L	0.14	0.14	2.5	2.5	2.1	2.1	77	79	90-110	2	10	M1
Sulfate	mg/L	403	403	50	50	466	450	126	93	90-110	4	10	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3112056 3112057

Parameter	Units	92512580004		3112056		3112057		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	3.4	3.4	50	50	57.4	57.5	108	108	90-110	0	10	
Fluoride	mg/L	0.18	0.18	2.5	2.5	2.7	2.7	102	102	90-110	0	10	
Sulfate	mg/L	11.3	11.3	50	50	65.5	65.6	108	109	90-110	0	10	

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: GA Power

Project

WO#: **92512587**



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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 2/17/15

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: TR Gun ID: 214 Type of Ice: Wet Blue None

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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.	
Sample Labels Match CDC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix: <u>W</u>			
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____

*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		—	—		—	—																						
2		—	—		—	—																						
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

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

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

January 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.



REPORT OF LABORATORY ANALYSIS

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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

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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

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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

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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	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 03 RADS

Pace Project No.: 92512557

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 03 RADS

Pace Project No.: 92512557

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
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:						
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

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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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 03 RADS

Pace Project No.: 92512557

QC Batch: 428749

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 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	Analysis Method:	EPA 9315
QC Batch 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.

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: GA Power

Project # **WO# : 92512557**



92512557

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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 2/17/15

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Thermometer: IR Gun ID: 214 Type of Ice: Wet Blue None

Yes No N/A

Cooler Temp: 4.2 Correction Factor: 0.1
Add/Subtract (°C)

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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		9.
-Includes Date/Time/ID/Analysis Matrix:	<u>W</u>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)

Document Revised: October 28, 2020
Page 2 of 2

Document No.:
F-CAR-CS-033-Rev.07

Issuing Authority:
Pace Carolinas Quality Office

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

Project #

WO# : 92512557

PM: KLH1

Due Date: 01/11/21

CLIENT: GA-GA Power

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

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

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3M-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2SO3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1		✓			✓																			BP3A				
2		✓			✓																			BP3A				
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

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

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 1/5/2021
Worklist: 58138
Matrix: DW

Method Blank Assessment	
MB Sample ID	2073293
MB Concentration:	0.176
M/B Counting Uncertainty:	0.135
MB MDC:	0.246
MB Numerical Performance Indicator:	2.55
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSD58138	LCSD58138
Count Date:	1/6/2021
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.041
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.515
Target Conc. (pCi/L, g, F):	4.669
Uncertainty (Calculated):	0.056
Result (pCi/L, g, F):	4.726
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.782
Numerical Performance Indicator:	0.14
Percent Recovery:	101.21%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92512557001
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:	35.10%
Duplicate RPD:	0.458
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

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

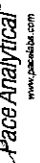
VAS
1-6-2021
VAM116121

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

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

VAM116121

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 1/5/2021
Worklist: 58138
Matrix: DW

Method Blank Assessment	
MB Sample ID	2073293
MB concentration:	0.176
MB 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		Y
Count Date:	1/6/2021	LCS58138
Spike ID:	19.083	19.083
Decay Corrected Spike Concentration (pCi/mL):	24.041	24.041
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.507	0.507
Target Conc. (pCi/L, g, F):	4.869	4.743
Uncertainty (Calculated):	0.055	0.057
Result (pCi/L, g, F):	4.725	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%

Duplicate Sample Assessment		Y
Sample I.D.:	LCS58138	LCS58138
Duplicate Sample I.D.:	LCS58138	19.083
Sample Result (pCi/L, g, F):	4.725	24.041
Sample Result Counting Uncertainty (pCi/L, g, F):	0.782	0.10
Sample Duplicate Result (pCi/L, g, F):	4.173	0.507
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.736	4.743
Are sample and/or duplicate results below RL?	NO	0.057
Duplicate Numerical Performance Indicator:	1.009	4.173
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	13.95%	0.736
Duplicate Status vs Numerical Indicator:	N/A	0.057
Duplicate Status vs RPD:	Pass	4.173
% RPD Limit:	25%	0.736

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

Comments:

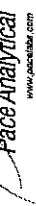
1-6-2021
ESM

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: Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

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

WAM 1/6/21

Quality Control Sample Performance Assessment



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
MB 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)?	
	LCSD58094	Y
Count Date:	1/4/2021	LCSD58094
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
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	5.637	5.675
Numerical Performance Indicator:	1.278	1.293
Percent Recovery:	1.73	1.77
Status vs Numerical Indicator:	125.39%	126.46%
Status vs Recovery:	N/A	N/A
Upper % Recovery Limits:	Pass	Pass
Lower % Recovery Limits:	135%	135%
% RPD Limit:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCSD58094
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
Duplicate (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%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D.: Sample MS I.D.: Sample MSD I.D.: Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Result 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:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.: Sample MS I.D.: Sample MSD I.D.: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate (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:

January 2021

February 04, 2021

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

RE: Project: HAMMOND AP-4 BKG 04
Pace Project No.: 92517911

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on January 21, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Asheville
- Pace Analytical Services - 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

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CERTIFICATIONS

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

Pace Analytical Services Charlotte

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

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

Pace Analytical Services Asheville

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

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

Pace Analytical Services Peachtree Corners

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

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

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SAMPLE SUMMARY

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92517911001	HGWA-47	Water	01/19/21 12:44	01/21/21 11:30
92517911002	HGWA-48D	Water	01/19/21 12:55	01/21/21 11:30
92517911003	EB-01	Water	01/20/21 14:00	01/21/21 11:30

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92517911001	HGWA-47	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	JLH	3
92517911002	HGWA-48D	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	JLH	3
92517911003	EB-01	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

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

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 BKG 04
Pace Project No.: 92517911

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92517911001	HGWA-47					
	Performed by	CUSTOME			02/04/21 09:44	
		R				
	pH	7.32	Std. Units		02/04/21 09:44	
EPA 6010D	Calcium	72.5	mg/L	1.0	02/01/21 18:39	M1
EPA 6020B	Barium	0.029	mg/L	0.010	02/02/21 18:02	
EPA 6020B	Boron	0.015J	mg/L	0.10	02/02/21 18:02	
EPA 6020B	Lead	0.000038J	mg/L	0.0050	02/02/21 18:02	
EPA 6020B	Lithium	0.0030J	mg/L	0.030	02/02/21 18:02	
SM 2450C-2011	Total Dissolved Solids	199	mg/L	10.0	01/22/21 09:38	
EPA 300.0 Rev 2.1 1993	Chloride	2.8	mg/L	1.0	01/26/21 23:24	
EPA 300.0 Rev 2.1 1993	Fluoride	0.057J	mg/L	0.10	01/26/21 23:24	
EPA 300.0 Rev 2.1 1993	Sulfate	2.6	mg/L	1.0	01/26/21 23:24	
92517911002	HGWA-48D					
	Performed by	CUSTOME			02/04/21 09:44	
		R				
	pH	7.40	Std. Units		02/04/21 09:44	
EPA 6010D	Calcium	58.9	mg/L	1.0	02/01/21 18:59	
EPA 6020B	Antimony	0.00042J	mg/L	0.0030	02/02/21 18:08	
EPA 6020B	Barium	0.095	mg/L	0.010	02/02/21 18:08	
EPA 6020B	Boron	0.015J	mg/L	0.10	02/02/21 18:08	
EPA 6020B	Chromium	0.0015J	mg/L	0.010	02/02/21 18:08	
EPA 6020B	Lead	0.000056J	mg/L	0.0050	02/02/21 18:08	
EPA 6020B	Lithium	0.0032J	mg/L	0.030	02/02/21 18:08	
EPA 6020B	Molybdenum	0.0018J	mg/L	0.010	02/02/21 18:08	
SM 2450C-2011	Total Dissolved Solids	224	mg/L	10.0	01/22/21 09:38	
EPA 300.0 Rev 2.1 1993	Chloride	2.7	mg/L	1.0	01/26/21 23:39	
EPA 300.0 Rev 2.1 1993	Fluoride	0.079J	mg/L	0.10	01/26/21 23:39	
EPA 300.0 Rev 2.1 1993	Sulfate	3.9	mg/L	1.0	01/26/21 23:39	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 BKG 04
Pace Project No.: 92517911

Sample: HGWA-47 Lab ID: 92517911001 Collected: 01/19/21 12:44 Received: 01/21/21 11:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		02/04/21 09:44		
pH	7.32	Std. Units			1		02/04/21 09:44		
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	02/01/21 11:55	02/01/21 18:39	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	02/02/21 11:36	02/02/21 18:02	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	02/02/21 11:36	02/02/21 18:02	7440-38-2	
Barium	0.029	mg/L	0.010	0.00071	1	02/02/21 11:36	02/02/21 18:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	02/02/21 11:36	02/02/21 18:02	7440-41-7	
Boron	0.015J	mg/L	0.10	0.0052	1	02/02/21 11:36	02/02/21 18:02	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	02/02/21 11:36	02/02/21 18:02	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	02/02/21 11:36	02/02/21 18:02	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	02/02/21 11:36	02/02/21 18:02	7440-48-4	
Lead	0.000038J	mg/L	0.0050	0.000036	1	02/02/21 11:36	02/02/21 18:02	7439-92-1	
Lithium	0.0030J	mg/L	0.030	0.00081	1	02/02/21 11:36	02/02/21 18:02	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	02/02/21 11:36	02/02/21 18:02	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	02/02/21 11:36	02/02/21 18:02	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	02/02/21 11:36	02/02/21 18:02	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	01/26/21 07:45	01/26/21 11:01	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	199	mg/L	10.0	10.0	1		01/22/21 09:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2.8	mg/L	1.0	0.60	1		01/26/21 23:24	16887-00-6	
Fluoride	0.057J	mg/L	0.10	0.050	1		01/26/21 23:24	16984-48-8	
Sulfate	2.6	mg/L	1.0	0.50	1		01/26/21 23:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

Sample: HGWA-48D		Lab ID: 92517911002		Collected: 01/19/21 12:55		Received: 01/21/21 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		02/04/21 09:44		
pH	7.40	Std. Units			1		02/04/21 09:44		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	58.9	mg/L	1.0	0.070	1	02/01/21 11:55	02/01/21 18:59	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00042J	mg/L	0.0030	0.00028	1	02/02/21 11:36	02/02/21 18:08	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	02/02/21 11:36	02/02/21 18:08	7440-38-2	
Barium	0.095	mg/L	0.010	0.00071	1	02/02/21 11:36	02/02/21 18:08	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	02/02/21 11:36	02/02/21 18:08	7440-41-7	
Boron	0.015J	mg/L	0.10	0.0052	1	02/02/21 11:36	02/02/21 18:08	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	02/02/21 11:36	02/02/21 18:08	7440-43-9	
Chromium	0.0015J	mg/L	0.010	0.00055	1	02/02/21 11:36	02/02/21 18:08	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	02/02/21 11:36	02/02/21 18:08	7440-48-4	
Lead	0.000056J	mg/L	0.0050	0.000036	1	02/02/21 11:36	02/02/21 18:08	7439-92-1	
Lithium	0.0032J	mg/L	0.030	0.00081	1	02/02/21 11:36	02/02/21 18:08	7439-93-2	
Molybdenum	0.0018J	mg/L	0.010	0.00069	1	02/02/21 11:36	02/02/21 18:08	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	02/02/21 11:36	02/02/21 18:08	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	02/02/21 11:36	02/02/21 18:08	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	01/26/21 07:45	01/26/21 11:04	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		01/22/21 09:38		
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		01/26/21 23:39	16887-00-6	
Fluoride	0.079J	mg/L	0.10	0.050	1		01/26/21 23:39	16984-48-8	
Sulfate	3.9	mg/L	1.0	0.50	1		01/26/21 23:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

Sample: EB-01		Lab ID: 92517911003		Collected: 01/20/21 14:00		Received: 01/21/21 11:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	02/01/21 11:28	02/02/21 14:39	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	02/02/21 09:23	02/02/21 19:34	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	02/02/21 09:23	02/02/21 19:34	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	02/02/21 09:23	02/02/21 19:34	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	02/02/21 09:23	02/02/21 19:34	7440-41-7		
Boron	ND	mg/L	0.10	0.0052	1	02/02/21 09:23	02/02/21 19:34	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	02/02/21 09:23	02/02/21 19:34	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	02/02/21 09:23	02/02/21 19:34	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	02/02/21 09:23	02/02/21 19:34	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	02/02/21 09:23	02/02/21 19:34	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	02/02/21 09:23	02/02/21 19:34	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	02/02/21 09:23	02/02/21 19:34	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	02/02/21 09:23	02/02/21 19:34	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	02/02/21 09:23	02/02/21 19:34	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	01/26/21 07:45	01/26/21 10:38	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		01/22/21 16:44			
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		01/25/21 00:19	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		01/25/21 00:19	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		01/25/21 00:19	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04
Pace Project No.: 92517911

QC Batch: 596653 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92517911003

METHOD BLANK: 3146677 Matrix: Water
Associated Lab Samples: 92517911003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	02/01/21 20:01	

LABORATORY CONTROL SAMPLE: 3146678

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3146679 3146681

Parameter	Units	92517740001		3146681		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result						
Calcium	mg/L	157	1	1	159	152	244	-497	75-125	5	20 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3146682 3146683

Parameter	Units	92517909002		3146683		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result						
Calcium	mg/L	177	1	1	182	183	421	522	75-125	1	20 M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

QC Batch: 596683	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D ATL
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92517911001, 92517911002

METHOD BLANK: 3146865 Matrix: Water

Associated Lab Samples: 92517911001, 92517911002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	02/01/21 18:30	

LABORATORY CONTROL SAMPLE: 3146866

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: 3146867 3146868

Parameter	Units	3146867		3146868		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	72.5	1	70.9	72.6	-153	11	75-125	2	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04
Pace Project No.: 92517911

QC Batch: 596887 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92517911003

METHOD BLANK: 3147679 Matrix: Water
Associated Lab Samples: 92517911003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00049J	0.0030	0.00028	02/02/21 18:08	
Arsenic	mg/L	ND	0.0050	0.00078	02/02/21 18:08	
Barium	mg/L	ND	0.010	0.00071	02/02/21 18:08	
Beryllium	mg/L	ND	0.0030	0.000046	02/02/21 18:08	
Boron	mg/L	ND	0.10	0.0052	02/02/21 18:08	
Cadmium	mg/L	ND	0.0025	0.00012	02/02/21 18:08	
Chromium	mg/L	ND	0.010	0.00055	02/02/21 18:08	
Cobalt	mg/L	ND	0.0050	0.00038	02/02/21 18:08	
Lead	mg/L	ND	0.0050	0.000036	02/02/21 18:08	
Lithium	mg/L	ND	0.030	0.00081	02/02/21 18:08	
Molybdenum	mg/L	ND	0.010	0.00069	02/02/21 18:08	
Selenium	mg/L	ND	0.010	0.0016	02/02/21 18:08	
Thallium	mg/L	ND	0.0010	0.00014	02/02/21 18:08	

LABORATORY CONTROL SAMPLE: 3147680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	111	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.10	100	80-120	
Beryllium	mg/L	0.1	0.11	106	80-120	
Boron	mg/L	1	1.1	108	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	102	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.11	108	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3147681 3147682

Parameter	Units	92517740002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	0.00068J	0.1	0.1	0.1	0.11	107	111	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.098	0.10	98	101	75-125	4	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

Parameter	Units	3147681		3147682		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92517740002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.058	0.1	0.1	0.15	0.16	96	102	75-125	4	20		
Beryllium	mg/L	ND	0.1	0.1	0.099	0.10	99	102	75-125	3	20		
Boron	mg/L	0.022J	1	1	1.0	1.0	99	100	75-125	1	20		
Cadmium	mg/L	ND	0.1	0.1	0.094	0.096	94	96	75-125	2	20		
Chromium	mg/L	0.00061J	0.1	0.1	0.10	0.10	102	103	75-125	2	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	100	101	75-125	1	20		
Lead	mg/L	0.000072J	0.1	0.1	0.094	0.097	94	97	75-125	3	20		
Lithium	mg/L	ND	0.1	0.1	0.098	0.10	98	101	75-125	4	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	101	101	75-125	0	20		
Selenium	mg/L	ND	0.1	0.1	0.093	0.094	92	93	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.095	0.097	95	97	75-125	2	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

QC Batch: 596939

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92517911001, 92517911002

METHOD BLANK: 3147882

Matrix: Water

Associated Lab Samples: 92517911001, 92517911002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	02/02/21 17:51	
Arsenic	mg/L	ND	0.0050	0.00078	02/02/21 17:51	
Barium	mg/L	ND	0.010	0.00071	02/02/21 17:51	
Beryllium	mg/L	ND	0.0030	0.000046	02/02/21 17:51	
Boron	mg/L	ND	0.10	0.0052	02/02/21 17:51	
Cadmium	mg/L	ND	0.0025	0.00012	02/02/21 17:51	
Chromium	mg/L	ND	0.010	0.00055	02/02/21 17:51	
Cobalt	mg/L	ND	0.0050	0.00038	02/02/21 17:51	
Lead	mg/L	ND	0.0050	0.000036	02/02/21 17:51	
Lithium	mg/L	ND	0.030	0.00081	02/02/21 17:51	
Molybdenum	mg/L	ND	0.010	0.00069	02/02/21 17:51	
Selenium	mg/L	ND	0.010	0.0016	02/02/21 17:51	
Thallium	mg/L	ND	0.0010	0.00014	02/02/21 17:51	

LABORATORY CONTROL SAMPLE: 3147883

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	111	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.10	100	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.097	97	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.094	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3147884

3147885

Parameter	Units	92517911002 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Antimony	mg/L	0.00042J	0.1	0.1	0.11	0.11	112	109	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.099	0.099	99	98	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

Parameter	Units	3147884		3147885		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92517911002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.095	0.1	0.1	0.19	0.19	99	95	75-125	2	20		
Beryllium	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	20		
Boron	mg/L	0.015J	1	1	1.0	0.99	100	97	75-125	3	20		
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	100	103	75-125	3	20		
Chromium	mg/L	0.0015J	0.1	0.1	0.10	0.10	102	99	75-125	3	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.095	99	95	75-125	4	20		
Lead	mg/L	0.000056J	0.1	0.1	0.096	0.095	95	95	75-125	0	20		
Lithium	mg/L	0.0032J	0.1	0.1	0.10	0.10	99	97	75-125	2	20		
Molybdenum	mg/L	0.0018J	0.1	0.1	0.11	0.10	106	101	75-125	5	20		
Selenium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	3	20		
Thallium	mg/L	ND	0.1	0.1	0.094	0.094	94	94	75-125	0	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

QC Batch: 594784	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92517911001, 92517911002, 92517911003

METHOD BLANK: 3138045 Matrix: Water

Associated Lab Samples: 92517911001, 92517911002, 92517911003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	01/26/21 10:28	

LABORATORY CONTROL SAMPLE: 3138046

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: 3138047 3138048

Parameter	Units	3138047		3138048		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0024	0.0027	94	106	75-125	12	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04
Pace Project No.: 92517911

QC Batch: 594633 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: 92517911001, 92517911002

METHOD BLANK: 3137200 Matrix: Water
Associated Lab Samples: 92517911001, 92517911002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	01/22/21 09:32	

LABORATORY CONTROL SAMPLE: 3137201

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

SAMPLE DUPLICATE: 3137203

Parameter	Units	92517894003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	131	126	4	10	

SAMPLE DUPLICATE: 3137350

Parameter	Units	92517894002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	64.0	67.0	5	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04
Pace Project No.: 92517911

QC Batch: 594779	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92517911003	Laboratory: Pace Analytical Services - Peachtree Corners, GA

METHOD BLANK: 3137995 Matrix: Water
Associated Lab Samples: 92517911003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	01/22/21 16:40	

LABORATORY CONTROL SAMPLE: 3137996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	394	98	84-108	

SAMPLE DUPLICATE: 3137997

Parameter	Units	92517969001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 3138171

Parameter	Units	92517909004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	289	270	7	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04
Pace Project No.: 92517911

QC Batch: 594878 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92517911003

METHOD BLANK: 3138480 Matrix: Water
Associated Lab Samples: 92517911003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	01/24/21 21:50	
Fluoride	mg/L	ND	0.10	0.050	01/24/21 21:50	
Sulfate	mg/L	ND	1.0	0.50	01/24/21 21:50	

LABORATORY CONTROL SAMPLE: 3138481

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.9	106	90-110	
Fluoride	mg/L	2.5	2.4	95	90-110	
Sulfate	mg/L	50	54.7	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3138482 3138483

Parameter	Units	92517740005		MS	MSD	MS	MSD	% Rec	Limits	RPD	Max	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec				
Chloride	mg/L	ND	50	50	53.9	53.4	108	107	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.5	103	98	90-110	5	10	
Sulfate	mg/L	ND	50	50	55.4	54.9	111	110	90-110	1	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3138484 3138485

Parameter	Units	92517704001		MS	MSD	MS	MSD	% Rec	Limits	RPD	Max	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec				
Chloride	mg/L	377	50	50	439	424	124	93	90-110	3	10	M6
Fluoride	mg/L	0.23	2.5	2.5	ND	ND	-9	-9	90-110		10	M1
Sulfate	mg/L	597	50	50	676	646	158	99	90-110	4	10	M6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

QC Batch: 595172	Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993	Analysis Description: 300.0 IC Anions
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92517911001, 92517911002

METHOD BLANK: 3139608 Matrix: Water

Associated Lab Samples: 92517911001, 92517911002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	01/26/21 18:25	
Fluoride	mg/L	ND	0.10	0.050	01/26/21 18:25	
Sulfate	mg/L	ND	1.0	0.50	01/26/21 18:25	

LABORATORY CONTROL SAMPLE: 3139609

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.7	99	90-110	
Fluoride	mg/L	2.5	2.3	93	90-110	
Sulfate	mg/L	50	51.5	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3139610 3139611

Parameter	Units	92517999001		3139610		3139611		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result				
Chloride	mg/L	6.1	50	50	58.6	58.9	105	106	90-110	1	10
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	102	102	90-110	0	10
Sulfate	mg/L	5.0	50	50	59.1	59.4	108	109	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3139612 3139613

Parameter	Units	92517909004		3139612		3139613		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result				
Chloride	mg/L	3.5	50	50	56.5	56.6	106	106	90-110	0	10
Fluoride	mg/L	0.22	2.5	2.5	2.5	2.5	92	93	90-110	0	10
Sulfate	mg/L	14.2	50	50	67.4	67.7	106	107	90-110	1	10

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-4 BKG 04

Pace Project No.: 92517911

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 BKG 04
Pace Project No.: 92517911

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92517911001	HGWA-47				
92517911002	HGWA-48D				
92517911001	HGWA-47	EPA 3010A	596683	EPA 6010D	596770
92517911002	HGWA-48D	EPA 3010A	596683	EPA 6010D	596770
92517911003	EB-01	EPA 3010A	596653	EPA 6010D	596772
92517911001	HGWA-47	EPA 3005A	596939	EPA 6020B	597029
92517911002	HGWA-48D	EPA 3005A	596939	EPA 6020B	597029
92517911003	EB-01	EPA 3005A	596887	EPA 6020B	597015
92517911001	HGWA-47	EPA 7470A	594784	EPA 7470A	595259
92517911002	HGWA-48D	EPA 7470A	594784	EPA 7470A	595259
92517911003	EB-01	EPA 7470A	594784	EPA 7470A	595259
92517911001	HGWA-47	SM 2450C-2011	594633		
92517911002	HGWA-48D	SM 2450C-2011	594633		
92517911003	EB-01	SM 2450C-2011	594779		
92517911001	HGWA-47	EPA 300.0 Rev 2.1 1993	595172		
92517911002	HGWA-48D	EPA 300.0 Rev 2.1 1993	595172		
92517911003	EB-01	EPA 300.0 Rev 2.1 1993	594878		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: GA Power

Project #: **WO# : 92517911**

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



Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 11/21/21 CTH

Packing Material: Bubble Wrap Bubble Bags None Other
 Thermometer: IR Gun ID: 233 Type of Ice: Wet Blue None

Biological Tissue Frozen? Yes No N/A

Cooler Temp: 4.1 Correction Factor: Add/Subtract (°C) -0.2

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 3.9

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

		Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>W</u>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

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

Project #

WO# : 92517911

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

PM: KLH1

Due Date: 02/04/21

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

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 (p9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2SO3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

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

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:
 Company: GA Power
 Address: Atlanta, GA

Section B Required Project Information:
 Report to: SCS Contacts
 Copy to: Geosynthetic Contacts

Section C Invoice Information:
 Attention: Southern Co.
 Company Name:
 Address:
 Page Order:
 Reference: Kevin Harding
 Project Manager:
 Price Profile #: 10839-4

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

Site Location STATE: GA

Page: 2 of 3

Section D Required Client Information:
 Valid Matrix Codes
 MATRIX CODE (see valid codes to left)
 SAMPLE TYPE (G=GRAB C=COMP)
 DATE TIME DATE TIME
 SAMPLE TEMP AT COLLECTION
 # OF CONTAINERS
 Unpreserved
 H₂SO₄
 HNO₃
 HCl
 NaOH
 Na₂S₂O₃
 Methanol
 Other
 Analysis Test
 Chloride, Fluoride, Sulfate
 TDS
 Full App. III & IV Metals
 RAD 226/228
 Requested Analysis Filtered (Y/N)
 Residual Chlorine (Y/N)
 Pace Project No./ Lab I.D. 52517911
 pH = 7.40

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservative Types		Analysis Test	Requester Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH = 7.40
					DATE	TIME			DATE	TIME				
1	HQWA-47		WT G	G	1/21/21	1255	5	2	3		X	X	X	
2	HQWA-48D		WT G	G	1/21/21	1255	5	2	3		X	X	X	
3	EB-01		WT G	G	1/21/21	1255	5	2	3		X	X	X	
4			WT G	G							X	X	X	
5														
6														
7														
8														
9														
10														
11														
12														

ADDITIONAL COMMENTS:
 RENOUNSHED BY / AFFILIATION: [Signature] DATE: 1/21/21 TIME: 1:30
 ACCEPTED BY / AFFILIATION: [Signature] DATE: 1/21/21 TIME: 1:30

Sample Conditions:
 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-Ed-2007

February 16, 2021

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

RE: Project: HAMMOND AP-4 BKG 04 RADS
Pace Project No.: 92517879

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on January 21, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

Revision 1 - This report replaces the February 15, 2021 report. This project was revised on February 16, 2021 to reflect the results for Sample 92517879003. (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

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CERTIFICATIONS

Project: HAMMOND AP-4 BKG 04 RADS
Pace Project No.: 92517879

Pace Analytical Services Pennsylvania

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-4 BKG 04 RADS
Pace Project No.: 92517879

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92517879001	HGWA-47	Water	01/19/21 12:44	01/21/21 11:30
92517879002	HGWA-48D	Water	01/19/21 12:55	01/21/21 11:30
92517879003	EB-01	Water	01/20/21 14:00	01/21/21 11:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92517879001	HGWA-47	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92517879002	HGWA-48D	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92517879003	EB-01	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92517879001	HGWA-47					
EPA 9315	Radium-226	-0.108 ± 0.0990 (0.427) C:88% T:NA	pCi/L		02/09/21 08:44	
EPA 9320	Radium-228	0.176 ± 0.476 (1.07) C:79% T:84%	pCi/L		02/04/21 18:26	
Total Radium Calculation	Total Radium	0.176 ± 0.575 (1.50)	pCi/L		02/10/21 10:29	
92517879002	HGWA-48D					
EPA 9315	Radium-226	0.324 ± 0.284 (0.525) C:81% T:NA	pCi/L		02/09/21 09:35	
EPA 9320	Radium-228	1.03 ± 0.620 (1.15) C:79% T:81%	pCi/L		02/04/21 18:26	
Total Radium Calculation	Total Radium	1.35 ± 0.904 (1.68)	pCi/L		02/10/21 10:29	
92517879003	EB-01					
EPA 9315	Radium-226	0.0391 ± 0.180 (0.466) C:86% T:NA	pCi/L		02/09/21 07:43	
EPA 9320	Radium-228	0.365 ± 0.434 (0.916) C:78% T:72%	pCi/L		02/04/21 14:59	
Total Radium Calculation	Total Radium	0.404 ± 0.614 (1.38)	pCi/L		02/16/21 11:07	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

Sample: HGWA-47 **Lab ID: 92517879001** Collected: 01/19/21 12:44 Received: 01/21/21 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	-0.108 ± 0.0990 (0.427) C:88% T:NA	pCi/L	02/09/21 08:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.176 ± 0.476 (1.07) C:79% T:84%	pCi/L	02/04/21 18:26	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.176 ± 0.575 (1.50)	pCi/L	02/10/21 10:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-48D Lab ID: 92517879002 Collected: 01/19/21 12:55 Received: 01/21/21 11:30 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.324 ± 0.284 (0.525) C:81% T:NA	pCi/L	02/09/21 09:35	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.03 ± 0.620 (1.15) C:79% T:81%	pCi/L	02/04/21 18:26	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.35 ± 0.904 (1.68)	pCi/L	02/10/21 10:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

Sample: EB-01 **Lab ID: 92517879003** Collected: 01/20/21 14:00 Received: 01/21/21 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0391 ± 0.180 (0.466) C:86% T:NA	pCi/L	02/09/21 07:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.365 ± 0.434 (0.916) C:78% T:72%	pCi/L	02/04/21 14:59	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.404 ± 0.614 (1.38)	pCi/L	02/16/21 11:07	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

QC Batch:	432561	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92517879001, 92517879002, 92517879003

METHOD BLANK: 2088957 Matrix: Water

Associated Lab Samples: 92517879001, 92517879002, 92517879003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.354 (0.709) C:81% T:84%	pCi/L	02/04/21 14:59	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

QC Batch: 433326

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92517879001, 92517879003

METHOD BLANK: 2092294

Matrix: Water

Associated Lab Samples: 92517879001, 92517879003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.150 ± 0.194 (0.397) C:92% T:NA	pCi/L	02/09/21 07:43	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

QC Batch: 433327

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92517879002

METHOD BLANK: 2092295

Matrix: Water

Associated Lab Samples: 92517879002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0319 ± 0.214 (0.551) C:89% T:NA	pCi/L	02/09/21 08:26	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 BKG 04 RADS

Pace Project No.: 92517879

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92517879001	HGWA-47	EPA 9315	433326		
92517879002	HGWA-48D	EPA 9315	433327		
92517879003	EB-01	EPA 9315	433326		
92517879001	HGWA-47	EPA 9320	432561		
92517879002	HGWA-48D	EPA 9320	432561		
92517879003	EB-01	EPA 9320	432561		
92517879001	HGWA-47	Total Radium Calculation	434359		
92517879002	HGWA-48D	Total Radium Calculation	434359		
92517879003	EB-01	Total Radium Calculation	435135		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: GA Power

Project #: **WO# : 92517879**



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

Date/Initials Person Examining Contents: 11/21/21 LCJ

Custody Seal Present? Yes No Seals Intact? Yes No

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer: IR Gun ID: 233 Type of Ice: Wet Blue None

Biological Tissue Frozen? Yes No N/A

Cooler Temp: 4.1 Correction Factor: Add/Subtract (°C) -0.2

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 3.9

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix:	<u>W</u>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)

Document Revised: October 28, 2020
Page 2 of 2

Document No.:
F-CAR-CS-033-Rev.07

Issuing Authority:
Pace Carolinas Quality Office

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

Project #

WO# : 92517879

PM: KLH1

Due Date: 02/11/21

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

CLIENT: GA-GA Power

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

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

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

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information	
Company	GA Power	Report To	SCS Contacts	Attention	Southern Co.
Address	Atlanta, GA	Copy To	Geosynetic Contacts	Company Name	
Email To	SCS Contacts	Purchase Order No.		Address	
Phone	Fax	Project Name	Plant Hammond AP-4 BKG 04	Pace Quote	
Requested Due Date/TAT:	10 Day	Project Number	GW5581	Reference	Kevin Herring
				Pace Project Manager	
				Pace Profile #	10839-4

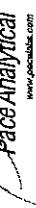
ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	PH = <u>7.32</u>	
				DATE	TIME					H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol					Other
1	HGWA-47	WT G	G	1/19	1249				5	2	3									
2	HGWA-48D	WT G	G						5	2	3									
3	ER-01	WT G	G						5	2	3									
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS	
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken. Full App. III & IV Metals=Sp, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl One sample set submitted for ER-01 but it will be reported for AP-10294 SOGS		[Signature]		1/21/21	1300	[Signature]		1/21/21	1300	Temp in °C	
		[Signature]		1/21/21	1300	[Signature]		1/21/21	1300	Received on Ice (Y/N)	
		[Signature]		1/21/21	1300	[Signature]		1/21/21	1300	Custody Sealed Cooler (Y/N)	
		[Signature]		1/21/21	1300	[Signature]		1/21/21	1300	Samples Intact (Y/N)	

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.

FALL-Q-020rev.07, 15-Feb-2007

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
 Analyst: JJY
 Date: 2/8/2021
 Worklist: 58638
 Matrix: DW

Method Blank Assessment	
MB Sample ID	2092294
MB concentration:	0.150
M/B Counting Uncertainty:	0.192
MB MDC:	0.397
MB Numerical Performance Indicator:	1.53
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS58638	LCS58638
Count Date:	2/9/2021	2/9/2021
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.040	24.040
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.505	0.507
Target Conc. (pCi/L, g, F):	4.765	4.742
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	4.773	5.375
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.808	0.863
Numerical Performance Indicator:	0.02	1.44
Percent Recovery:	100.16%	113.37%
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	Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
Sample I.D.:	LCS58638
Duplicate Sample I.D.:	LCS58638
Sample Result (pCi/L, g, F):	4.773
Sample Duplicate Result (pCi/L, g, F):	0.808
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	5.375
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.863
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.999
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	12.37%
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:		
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

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

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

Comments:

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: JJY
Date: 2/8/2021
Worklist: 58638
Matrix: DW

Method Blank Assessment	
MB Sample ID	2092294
MB Concentration:	0.150
M/B Counting Uncertainty:	0.192
MB MDC:	0.397
MB Numerical Performance Indicator:	1.53
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D Y or N?	
	LGS58638	LCS058638
Count Date:	2/9/2021	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.040	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.505	
Target Conc. (pCi/L, g, F):	4.765	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.773	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.808	
Numerical Performance Indicator:	0.02	
Percent Recovery:	100.16%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	92517856001
Duplicate Sample I.D.:	92517856001DUP
Sample Result (pCi/L, g, F):	0.203
Sample Duplicate Result (pCi/L, g, F):	0.222
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.681
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.370
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-2.171
Duplicate RPD:	108.17%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

NI 33 acceptable
Batch must be re-prepped due to unacceptable precision.

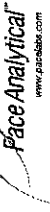
JJY
2-9-21

Mu 2/9/21

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result 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 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:

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: JJY
Date: 2/8/2021
Worklist: 58639
Matrix: DW

Method Blank Assessment	
MB Sample ID	2092285
MB concentration:	0.032
M/B Counting Uncertainty:	0.214
MB MDC:	0.551
MB Numerical Performance Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	2/9/2021
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.040
Volume Used (mL):	0.70
Aliquot Volume (L, g, F):	0.515
Target Conc. (pCi/L, g, F):	4.669
Uncertainty (Calculated):	0.056
Result (pCi/L, g, F):	4.791
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.824
Numerical Performance Indicator:	0.29
Percent Recovery:	102.60%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92518305003
Duplicate Sample I.D.:	92518305003DUP
Sample Result (pCi/L, g, F):	0.155
Sample Duplicate Result (pCi/L, g, F):	0.253
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	-0.029
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.286
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	0.944
Duplicate RPD:	294.66%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail
% RPD Limit:	25%

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

Comments:

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

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

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: JJY
Date: 2/8/2021
Worklist: 58639
Matrix: DW

Method Blank Assessment	
MB Sample ID	2092295
MB concentration:	0.032
M/B Counting Uncertainty:	0.214
MB MDC:	0.551
MB Numerical Performance Indicator:	0.29
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS58639	Y
Count Date:	2/9/2021	LCS58639
Spike ID:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.040	24.040
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.515	0.512
Target Conc. (pCi/L, g, F):	4.669	4.689
Uncertainty (Calculated):	0.056	0.056
Result (pCi/L, g, F):	4.791	4.423
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.824	0.798
Numerical Performance Indicator:	0.29	-0.68
Percent Recovery:	102.60%	94.11%
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	Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
Sample I.D.:	LCS58639
Duplicate Sample I.D.:	LCS58639
Sample Result (pCi/L, g, F):	4.791
Sample Duplicate Result (pCi/L, g, F):	0.824
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.423
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.798
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	0.628
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	8.63%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

JJY
2-9-21

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.:		
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:		
Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate 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:

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 2/2/2021
Worklist: 58538
Matrix: WT



Method Blank Assessment	
MB Sample ID	2086957
MB concentration:	0.423
M/B 2 Sigma CSU:	0.354
MB MDC:	0.709
MB Numerical Performance Indicator:	2.34
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	Y
LCSD58538	2/4/2021
Count Date:	2/4/2021
Spike I.D.:	20-030
Decay Corrected Spike Concentration (pCi/mL):	36.635
Volume Used (L, g, F):	0.10
Aliquot Volume (L, g, F):	0.806
Target Conc. (pCi/L, g, F):	4.543
Uncertainty (Calculated):	0.224
Result (pCi/L, g, F):	2.734
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	0.942
Numerical Performance Indicator:	-3.70
Percent Recovery:	59.92%
Status vs Numerical Indicator:	Fail**
Status vs Recovery:	Fail Low**
Upper % Recovery Limits:	135%
Lower % Recovery Limits:	60%

Duplicate Sample Assessment	
Sample I.D.:	LCSD58538
Duplicate Sample I.D.:	LCSD58538
Sample Result (pCi/L, g, F):	2.734
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.942
Sample Duplicate Result (pCi/L, g, F):	3.105
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.887
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.563
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	13.15%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

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

Comments:

**Batch must be re-prepped due to LCS failure.

2/3/21

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

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

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 2/5/2021
Worklist: 58538
Matrix:



Method Blank Assessment

MB Sample ID
MB concentration:
MB MDC:
MB Numerical Performance Indicator:
MB Status vs Numerical Indicator:
MB Status vs. MDC:

LCSID (Y or N)?	Y	
	LCS58538	2/8/2021
Count Date:	2/8/2021	LCS58538
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	36.590	36.590
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.803	0.806
Target Conc. (pCi/L, g, F):	4.557	4.538
Uncertainty (Calculated):	0.223	0.222
Result (pCi/L, g, F):	4.275	4.409
Numerical Performance Indicator:	1.024	1.024
Percent Recovery:	-0.53	-0.24
Status vs Numerical Indicator:	93.80%	97.18%
Upper % Recovery Limits:	N/A	N/A
Lower % Recovery Limits:	Pass	Pass
	135%	135%
	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): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: 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	Matrix Spiker/Matrix Spike Duplicate Sample Assessment
Sample I.D.: Duplicate Sample I.D.: Sample Result (pCi/L, g, F): Sample Duplicate Result (pCi/L, g, F): Are sample and/or duplicate results below RL? Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator: Duplicate RPD: Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD: % RPD Limit:	Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

Enter Duplicate sample IDs if other than LCS/LCSD in the space below.

2/9/21

Comments:

Ma 2/9/21

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

March 2021

April 12, 2021

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

RE: Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 12, 2021 and March 22, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Asheville
- Pace Analytical Services - 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 Company
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92527612001	HGWA-111	Water	03/11/21 16:25	03/12/21 13:43
92527612002	HGWA-111 FILTERED	Water	03/11/21 16:25	03/12/21 13:43
92527612003	HGWA-47	Water	03/12/21 15:02	03/15/21 12:00
92527612004	HGWA-48D	Water	03/12/21 12:42	03/15/21 12:00
92527612005	HGWA-112	Water	03/12/21 13:30	03/15/21 12:00
92527612006	HGWA-113	Water	03/16/21 12:50	03/17/21 13:10
92527612007	HGWA-113 FILTERED	Water	03/16/21 12:50	03/17/21 13:10
92527612008	HGWC-101	Water	03/17/21 11:48	03/18/21 13:17
92527612009	HGWC-102	Water	03/17/21 14:25	03/18/21 13:17
92527612010	HGWC-109	Water	03/17/21 12:52	03/18/21 13:17
92527612011	DUP-4	Water	03/17/21 00:00	03/18/21 13:17
92527612012	HGWC-103	Water	03/18/21 11:53	03/19/21 13:40
92527612013	HGWC-105	Water	03/18/21 12:46	03/19/21 13:40
92527612014	HGWC-107	Water	03/18/21 18:01	03/19/21 13:40
92527612015	HGWC-118	Water	03/18/21 17:18	03/19/21 13:40
92527612016	HGWC-118 FILTERED	Water	03/18/21 17:18	03/19/21 13:40
92527612017	HGWC-117	Water	03/19/21 11:45	03/22/21 15:41
92527612018	FB-4	Water	03/19/21 00:00	03/22/21 15:41

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92527612001	HGWA-111	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	JLH	3
92527612002	HGWA-111 FILTERED	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	JLH	3
92527612003	HGWA-47	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612004	HGWA-48D	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612005	HGWA-112	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612006	HGWA-113	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	JLH	3
92527612007	HGWA-113 FILTERED	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	JLH	3
92527612008	HGWC-101	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612009	HGWC-102	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612010	HGWC-109	EPA 6010D	DRB	1

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612011	DUP-4	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612012	HGWC-103	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612013	HGWC-105	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612014	HGWC-107	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612015	HGWC-118	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612016	HGWC-118 FILTERED	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612017	HGWC-117	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92527612018	FB-4	EPA 6010D	DRB	1
		EPA 6020B	KH	9
		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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

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

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92527612001	HGWA-111					
	Performed by	CUSTOME			03/22/21 11:59	
		R				
	pH	7.20	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	53.2	mg/L	1.0	04/01/21 18:56	M1
EPA 6020B	Barium	0.037	mg/L	0.0050	04/05/21 19:27	
EPA 6020B	Beryllium	0.00014J	mg/L	0.00050	04/05/21 19:27	
EPA 6020B	Boron	0.010J	mg/L	0.040	04/05/21 19:27	
EPA 6020B	Chromium	0.0020J	mg/L	0.0050	04/05/21 19:27	
EPA 6020B	Lead	0.0011	mg/L	0.0010	04/05/21 19:27	
EPA 6020B	Lithium	0.0047J	mg/L	0.030	04/05/21 19:27	
SM 2450C-2011	Total Dissolved Solids	207	mg/L	10.0	03/17/21 17:40	
EPA 300.0 Rev 2.1 1993	Chloride	3.4	mg/L	1.0	03/20/21 04:44	
EPA 300.0 Rev 2.1 1993	Fluoride	0.057J	mg/L	0.10	03/20/21 04:44	
EPA 300.0 Rev 2.1 1993	Sulfate	1.5	mg/L	1.0	03/20/21 04:44	
92527612002	HGWA-111 FILTERED					
	Performed by	CUSTOME			03/22/21 11:59	
		R				
	pH	7.20	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	54.3	mg/L	1.0	04/01/21 19:25	
EPA 6020B	Barium	0.031	mg/L	0.0050	04/05/21 19:50	
EPA 6020B	Boron	0.011J	mg/L	0.040	04/05/21 19:50	
EPA 6020B	Chromium	0.0011J	mg/L	0.0050	04/05/21 19:50	
EPA 6020B	Lead	0.00025J	mg/L	0.0010	04/05/21 19:50	
EPA 6020B	Lithium	0.0029J	mg/L	0.030	04/05/21 19:50	
SM 2450C-2011	Total Dissolved Solids	188	mg/L	10.0	03/17/21 17:40	
EPA 300.0 Rev 2.1 1993	Chloride	3.5	mg/L	1.0	03/20/21 04:58	
EPA 300.0 Rev 2.1 1993	Fluoride	0.053J	mg/L	0.10	03/20/21 04:58	
EPA 300.0 Rev 2.1 1993	Sulfate	1.6	mg/L	1.0	03/20/21 04:58	
92527612003	HGWA-47					
	Performed by	CUSTOME			03/22/21 11:59	
		R				
	pH	7.52	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	69.2	mg/L	1.0	04/01/21 19:30	
EPA 6020B	Barium	0.030	mg/L	0.0050	04/05/21 19:56	
EPA 6020B	Boron	0.0067J	mg/L	0.040	04/05/21 19:56	
EPA 6020B	Lithium	0.0031J	mg/L	0.030	04/05/21 19:56	
SM 2450C-2011	Total Dissolved Solids	217	mg/L	10.0	03/19/21 18:45	
EPA 300.0 Rev 2.1 1993	Chloride	2.7	mg/L	1.0	03/21/21 01:40	
EPA 300.0 Rev 2.1 1993	Fluoride	0.062J	mg/L	0.10	03/21/21 01:40	
EPA 300.0 Rev 2.1 1993	Sulfate	1.9	mg/L	1.0	03/21/21 01:40	
92527612004	HGWA-48D					
	Performed by	CUSTOME			03/22/21 11:59	
		R				
	pH	7.51	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	57.5	mg/L	1.0	04/01/21 19:35	
EPA 6020B	Arsenic	0.0018J	mg/L	0.0050	04/05/21 20:02	
EPA 6020B	Barium	0.10	mg/L	0.0050	04/05/21 20:02	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92527612004	HGWA-48D					
EPA 6020B	Boron	0.012J	mg/L	0.040	04/05/21 20:02	
EPA 6020B	Chromium	0.00062J	mg/L	0.0050	04/05/21 20:02	
EPA 6020B	Lead	0.000048J	mg/L	0.0010	04/05/21 20:02	
EPA 6020B	Lithium	0.0031J	mg/L	0.030	04/05/21 20:02	
SM 2450C-2011	Total Dissolved Solids	204	mg/L	10.0	03/19/21 18:45	
EPA 300.0 Rev 2.1 1993	Chloride	2.6	mg/L	1.0	03/21/21 01:55	
EPA 300.0 Rev 2.1 1993	Fluoride	0.085J	mg/L	0.10	03/21/21 01:55	
EPA 300.0 Rev 2.1 1993	Sulfate	4.7	mg/L	1.0	03/21/21 01:55	
92527612005	HGWA-112					
	Performed by	CUSTOMER			03/22/21 11:59	
	pH	5.60	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	6.9	mg/L	1.0	04/01/21 19:40	
EPA 6020B	Barium	0.030	mg/L	0.0050	04/05/21 20:08	
EPA 6020B	Beryllium	0.000054J	mg/L	0.00050	04/05/21 20:08	
EPA 6020B	Boron	0.0061J	mg/L	0.040	04/05/21 20:08	
EPA 6020B	Chromium	0.0045J	mg/L	0.0050	04/05/21 20:08	
EPA 6020B	Lead	0.00017J	mg/L	0.0010	04/05/21 20:08	
SM 2450C-2011	Total Dissolved Solids	56.0	mg/L	10.0	03/19/21 18:45	
EPA 300.0 Rev 2.1 1993	Chloride	5.3	mg/L	1.0	03/23/21 11:22	
EPA 300.0 Rev 2.1 1993	Sulfate	0.52J	mg/L	1.0	03/23/21 11:22	
92527612006	HGWA-113					
	Performed by	CUSTOMER			03/22/21 11:59	
	pH	6.14	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	8.6	mg/L	1.0	04/01/21 19:44	
EPA 6020B	Arsenic	0.0011J	mg/L	0.0050	04/05/21 20:25	
EPA 6020B	Barium	0.054	mg/L	0.0050	04/05/21 20:25	
EPA 6020B	Beryllium	0.00018J	mg/L	0.00050	04/05/21 20:25	
EPA 6020B	Boron	0.011J	mg/L	0.040	04/05/21 20:25	
EPA 6020B	Chromium	0.0061	mg/L	0.0050	04/05/21 20:25	
EPA 6020B	Cobalt	0.0013J	mg/L	0.0050	04/05/21 20:25	
EPA 6020B	Lead	0.0016	mg/L	0.0010	04/05/21 20:25	
EPA 6020B	Lithium	0.0026J	mg/L	0.030	04/05/21 20:25	
SM 2450C-2011	Total Dissolved Solids	99.0	mg/L	10.0	03/23/21 07:59	
EPA 300.0 Rev 2.1 1993	Chloride	1.6	mg/L	1.0	03/21/21 23:03	
EPA 300.0 Rev 2.1 1993	Fluoride	0.18	mg/L	0.10	03/21/21 23:03	
EPA 300.0 Rev 2.1 1993	Sulfate	7.7	mg/L	1.0	03/21/21 23:03	
92527612007	HGWA-113 FILTERED					
	Performed by	CUSTOMER			03/22/21 11:59	
	pH	6.14	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	8.4	mg/L	1.0	04/01/21 19:49	
EPA 6020B	Barium	0.034	mg/L	0.0050	04/05/21 20:30	
EPA 6020B	Boron	0.010J	mg/L	0.040	04/05/21 20:30	
EPA 6020B	Chromium	0.0025J	mg/L	0.0050	04/05/21 20:30	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92527612007	HGWA-113 FILTERED					
EPA 6020B	Lead	0.00022J	mg/L	0.0010	04/05/21 20:30	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	04/05/21 20:30	
SM 2450C-2011	Total Dissolved Solids	88.0	mg/L	10.0	03/23/21 07:59	
EPA 300.0 Rev 2.1 1993	Chloride	1.6	mg/L	1.0	03/21/21 23:44	
EPA 300.0 Rev 2.1 1993	Fluoride	0.17	mg/L	0.10	03/21/21 23:44	
EPA 300.0 Rev 2.1 1993	Sulfate	7.3	mg/L	1.0	03/21/21 23:44	
92527612008	HGWC-101					
	Performed by	CUSTOMER			03/22/21 11:59	
	pH	5.41	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	21.8	mg/L	1.0	04/01/21 20:04	
EPA 6020B	Barium	0.040	mg/L	0.0050	04/05/21 20:36	
EPA 6020B	Beryllium	0.000059J	mg/L	0.00050	04/05/21 20:36	
EPA 6020B	Boron	0.13	mg/L	0.040	04/05/21 20:36	
EPA 6020B	Chromium	0.00075J	mg/L	0.0050	04/05/21 20:36	
EPA 6020B	Cobalt	0.0023J	mg/L	0.0050	04/05/21 20:36	
SM 2450C-2011	Total Dissolved Solids	213	mg/L	10.0	03/23/21 08:41	
EPA 300.0 Rev 2.1 1993	Chloride	5.5	mg/L	1.0	03/23/21 07:11	
EPA 300.0 Rev 2.1 1993	Sulfate	107	mg/L	2.0	03/23/21 15:32	
92527612009	HGWC-102					
	Performed by	CUSTOMER			03/22/21 11:59	
	pH	5.78	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	111	mg/L	1.0	04/01/21 20:08	
EPA 6020B	Barium	0.031	mg/L	0.0050	04/05/21 20:42	
EPA 6020B	Boron	2.7	mg/L	0.040	04/05/21 20:42	
EPA 6020B	Cadmium	0.00094	mg/L	0.00050	04/05/21 20:42	
EPA 6020B	Cobalt	0.0012J	mg/L	0.0050	04/05/21 20:42	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	04/05/21 20:42	
SM 2450C-2011	Total Dissolved Solids	626	mg/L	20.0	03/23/21 08:41	
EPA 300.0 Rev 2.1 1993	Chloride	6.9	mg/L	1.0	03/23/21 07:25	
EPA 300.0 Rev 2.1 1993	Sulfate	332	mg/L	7.0	03/23/21 15:47	
92527612010	HGWC-109					
	Performed by	CUSTOMER			03/22/21 11:59	
	pH	6.55	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	37.3	mg/L	1.0	04/01/21 20:13	
EPA 6020B	Arsenic	0.0019J	mg/L	0.0050	04/05/21 20:48	
EPA 6020B	Barium	0.077	mg/L	0.0050	04/05/21 20:48	
EPA 6020B	Boron	0.26	mg/L	0.040	04/05/21 20:48	
EPA 6020B	Cobalt	0.0030J	mg/L	0.0050	04/05/21 20:48	
SM 2450C-2011	Total Dissolved Solids	171	mg/L	10.0	03/23/21 08:41	
EPA 300.0 Rev 2.1 1993	Chloride	4.7	mg/L	1.0	03/23/21 07:38	
EPA 300.0 Rev 2.1 1993	Fluoride	0.089J	mg/L	0.10	03/23/21 07:38	
EPA 300.0 Rev 2.1 1993	Sulfate	28.3	mg/L	1.0	03/23/21 07:38	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92527612011	DUP-4					
EPA 6010D	Calcium	109	mg/L	1.0	04/01/21 20:18	
EPA 6020B	Barium	0.030	mg/L	0.0050	04/05/21 20:53	
EPA 6020B	Boron	2.7	mg/L	0.040	04/05/21 20:53	
EPA 6020B	Cadmium	0.00092	mg/L	0.00050	04/05/21 20:53	
EPA 6020B	Chromium	0.10	mg/L	0.0050	04/05/21 20:53	
EPA 6020B	Cobalt	0.0014J	mg/L	0.0050	04/05/21 20:53	
EPA 6020B	Lithium	0.0013J	mg/L	0.030	04/05/21 20:53	
SM 2450C-2011	Total Dissolved Solids	612	mg/L	20.0	03/23/21 08:41	
EPA 300.0 Rev 2.1 1993	Chloride	7.2	mg/L	1.0	03/23/21 08:19	
EPA 300.0 Rev 2.1 1993	Sulfate	336	mg/L	7.0	03/23/21 16:01	
92527612012	HGWC-103					
	Performed by	CUSTOME			03/22/21 11:59	
		R				
	pH	5.51	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	83.7	mg/L	1.0	04/01/21 20:23	
EPA 6020B	Barium	0.042	mg/L	0.0050	04/05/21 20:59	
EPA 6020B	Beryllium	0.000061J	mg/L	0.00050	04/05/21 20:59	
EPA 6020B	Boron	2.4	mg/L	0.040	04/05/21 20:59	
EPA 6020B	Cadmium	0.00068	mg/L	0.00050	04/05/21 20:59	
EPA 6020B	Chromium	0.0030J	mg/L	0.0050	04/05/21 20:59	
EPA 6020B	Cobalt	0.0021J	mg/L	0.0050	04/05/21 20:59	
EPA 6020B	Lead	0.00024J	mg/L	0.0010	04/05/21 20:59	
EPA 6020B	Lithium	0.0018J	mg/L	0.030	04/05/21 20:59	
SM 2450C-2011	Total Dissolved Solids	465	mg/L	10.0	03/25/21 11:10	
EPA 300.0 Rev 2.1 1993	Chloride	6.2	mg/L	1.0	03/26/21 00:16	
EPA 300.0 Rev 2.1 1993	Sulfate	286	mg/L	6.0	03/26/21 18:23	
92527612013	HGWC-105					
	Performed by	CUSTOME			03/22/21 11:59	
		R				
	pH	6.57	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	97.7	mg/L	1.0	04/01/21 20:27	
EPA 6020B	Barium	0.082	mg/L	0.0050	04/05/21 21:05	
EPA 6020B	Boron	1.5	mg/L	0.040	04/05/21 21:05	
EPA 6020B	Chromium	0.00058J	mg/L	0.0050	04/05/21 21:05	
EPA 6020B	Cobalt	0.00045J	mg/L	0.0050	04/05/21 21:05	
EPA 6020B	Lead	0.000058J	mg/L	0.0010	04/05/21 21:05	
EPA 6020B	Lithium	0.0042J	mg/L	0.030	04/05/21 21:05	
SM 2450C-2011	Total Dissolved Solids	410	mg/L	10.0	03/25/21 11:10	
EPA 300.0 Rev 2.1 1993	Chloride	4.3	mg/L	1.0	03/26/21 00:30	
EPA 300.0 Rev 2.1 1993	Sulfate	196	mg/L	4.0	03/26/21 18:38	
92527612014	HGWC-107					
	Performed by	CUSTOME			03/22/21 11:59	
		R				
	pH	6.20	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	56.0	mg/L	1.0	04/01/21 20:32	
EPA 6020B	Barium	0.041	mg/L	0.0050	04/05/21 21:11	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92527612014	HGWC-107					
EPA 6020B	Boron	0.92	mg/L	0.040	04/05/21 21:11	
EPA 6020B	Lead	0.000091J	mg/L	0.0010	04/05/21 21:11	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	04/05/21 21:11	
SM 2450C-2011	Total Dissolved Solids	255	mg/L	10.0	03/25/21 11:10	D6
EPA 300.0 Rev 2.1 1993	Chloride	3.2	mg/L	1.0	03/26/21 01:10	
EPA 300.0 Rev 2.1 1993	Sulfate	128	mg/L	3.0	03/26/21 18:54	
92527612015	HGWC-118					
	Performed by	CUSTOME			03/22/21 11:59	
		R				
	pH	7.11	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	85.4	mg/L	1.0	04/01/21 20:37	
EPA 6020B	Arsenic	0.0010J	mg/L	0.0050	04/05/21 21:16	
EPA 6020B	Barium	0.067	mg/L	0.0050	04/05/21 21:16	
EPA 6020B	Beryllium	0.000093J	mg/L	0.00050	04/05/21 21:16	
EPA 6020B	Boron	0.81	mg/L	0.040	04/05/21 21:16	
EPA 6020B	Chromium	0.0021J	mg/L	0.0050	04/05/21 21:16	
EPA 6020B	Cobalt	0.0012J	mg/L	0.0050	04/05/21 21:16	
EPA 6020B	Lead	0.00088J	mg/L	0.0010	04/05/21 21:16	
EPA 6020B	Lithium	0.0029J	mg/L	0.030	04/05/21 21:16	
SM 2450C-2011	Total Dissolved Solids	328	mg/L	10.0	03/25/21 11:10	
EPA 300.0 Rev 2.1 1993	Chloride	4.3	mg/L	1.0	03/26/21 01:24	
EPA 300.0 Rev 2.1 1993	Fluoride	0.079J	mg/L	0.10	03/26/21 01:24	
EPA 300.0 Rev 2.1 1993	Sulfate	87.8	mg/L	1.0	03/26/21 01:24	M1
92527612016	HGWC-118 FILTERED					
	Performed by	CUSTOME			03/22/21 11:59	
		R				
	pH	7.11	Std. Units		03/22/21 11:59	
EPA 6010D	Calcium	86.2	mg/L	1.0	04/01/21 20:42	
EPA 6020B	Barium	0.062	mg/L	0.0050	04/05/21 21:33	
EPA 6020B	Boron	0.78	mg/L	0.040	04/05/21 21:33	
EPA 6020B	Lithium	0.0020J	mg/L	0.030	04/05/21 21:33	
SM 2450C-2011	Total Dissolved Solids	321	mg/L	10.0	03/25/21 11:10	
EPA 300.0 Rev 2.1 1993	Chloride	4.0	mg/L	1.0	03/25/21 17:02	
EPA 300.0 Rev 2.1 1993	Fluoride	0.073J	mg/L	0.10	03/25/21 17:02	
EPA 300.0 Rev 2.1 1993	Sulfate	81.7	mg/L	1.0	03/25/21 17:02	
92527612017	HGWC-117					
	Performed by	CUSTOME			03/22/21 17:08	
		R				
	pH	6.14	Std. Units		03/22/21 17:08	
EPA 6010D	Calcium	87.3	mg/L	1.0	04/01/21 20:46	
EPA 6020B	Barium	0.058	mg/L	0.0050	04/05/21 21:39	
EPA 6020B	Beryllium	0.000081J	mg/L	0.00050	04/05/21 21:39	
EPA 6020B	Boron	1.5	mg/L	0.040	04/05/21 21:39	
EPA 6020B	Cadmium	0.0010	mg/L	0.00050	04/05/21 21:39	
EPA 6020B	Chromium	0.0010J	mg/L	0.0050	04/05/21 21:39	
EPA 6020B	Cobalt	0.011	mg/L	0.0050	04/05/21 21:39	

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92527612017	HGWC-117					
EPA 6020B	Lead	0.00038J	mg/L	0.0010	04/05/21 21:39	
EPA 6020B	Lithium	0.0035J	mg/L	0.030	04/05/21 21:39	
SM 2450C-2011	Total Dissolved Solids	371	mg/L	10.0	03/26/21 09:32	
EPA 300.0 Rev 2.1 1993	Chloride	24.9	mg/L	1.0	03/25/21 17:31	
EPA 300.0 Rev 2.1 1993	Sulfate	162	mg/L	3.0	03/26/21 14:10	
92527612018	FB-4					
EPA 6020B	Chromium	0.00077J	mg/L	0.0050	04/05/21 21:51	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWA-111 Lab ID: 92527612001 Collected: 03/11/21 16:25 Received: 03/12/21 13:43 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		03/22/21 11:59		
pH	7.20	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	53.2	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 18:56	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	04/01/21 10:56	04/05/21 19:27	7440-38-2	
Barium	0.037	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 19:27	7440-39-3	
Beryllium	0.00014J	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 19:27	7440-41-7	
Boron	0.010J	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 19:27	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 19:27	7440-43-9	
Chromium	0.0020J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 19:27	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 19:27	7440-48-4	
Lead	0.0011	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 19:27	7439-92-1	
Lithium	0.0047J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 19:27	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	207	mg/L	10.0	10.0	1		03/17/21 17:40		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	3.4	mg/L	1.0	0.60	1		03/20/21 04:44	16887-00-6	
Fluoride	0.057J	mg/L	0.10	0.050	1		03/20/21 04:44	16984-48-8	
Sulfate	1.5	mg/L	1.0	0.50	1		03/20/21 04:44	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWA-111 FILTERED Lab ID: 92527612002 Collected: 03/11/21 16:25 Received: 03/12/21 13:43 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		03/22/21 11:59		
pH	7.20	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	54.3	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 19:25	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	04/01/21 10:56	04/05/21 19:50	7440-38-2	
Barium	0.031	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 19:50	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 19:50	7440-41-7	
Boron	0.011J	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 19:50	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 19:50	7440-43-9	
Chromium	0.0011J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 19:50	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 19:50	7440-48-4	
Lead	0.00025J	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 19:50	7439-92-1	
Lithium	0.0029J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 19:50	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		03/17/21 17:40		
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		03/20/21 04:58	16887-00-6	
Fluoride	0.053J	mg/L	0.10	0.050	1		03/20/21 04:58	16984-48-8	
Sulfate	1.6	mg/L	1.0	0.50	1		03/20/21 04:58	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWA-47 Lab ID: 92527612003 Collected: 03/12/21 15:02 Received: 03/15/21 12:00 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		03/22/21 11:59		
pH	7.52	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	69.2	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 19:30	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	04/01/21 10:56	04/05/21 19:56	7440-38-2	
Barium	0.030	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 19:56	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 19:56	7440-41-7	
Boron	0.0067J	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 19:56	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 19:56	7440-43-9	
Chromium	ND	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 19:56	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 19:56	7440-48-4	
Lead	ND	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 19:56	7439-92-1	
Lithium	0.0031J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 19:56	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	217	mg/L	10.0	10.0	1		03/19/21 18:45		
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		03/21/21 01:40	16887-00-6	
Fluoride	0.062J	mg/L	0.10	0.050	1		03/21/21 01:40	16984-48-8	
Sulfate	1.9	mg/L	1.0	0.50	1		03/21/21 01:40	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWA-48D Lab ID: 92527612004 Collected: 03/12/21 12:42 Received: 03/15/21 12:00 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		03/22/21 11:59		
pH	7.51	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	57.5	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 19:35	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0018J	mg/L	0.0050	0.00078	1	04/01/21 10:56	04/05/21 20:02	7440-38-2	
Barium	0.10	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 20:02	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 20:02	7440-41-7	
Boron	0.012J	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 20:02	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 20:02	7440-43-9	
Chromium	0.00062J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 20:02	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 20:02	7440-48-4	
Lead	0.000048J	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 20:02	7439-92-1	
Lithium	0.0031J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 20:02	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	204	mg/L	10.0	10.0	1		03/19/21 18:45		
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		03/21/21 01:55	16887-00-6	
Fluoride	0.085J	mg/L	0.10	0.050	1		03/21/21 01:55	16984-48-8	
Sulfate	4.7	mg/L	1.0	0.50	1		03/21/21 01:55	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWA-112 Lab ID: 92527612005 Collected: 03/12/21 13:30 Received: 03/15/21 12:00 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		03/22/21 11:59		
pH	5.60	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	6.9	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 19:40	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	04/01/21 10:56	04/05/21 20:08	7440-38-2	
Barium	0.030	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 20:08	7440-39-3	
Beryllium	0.000054J	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 20:08	7440-41-7	
Boron	0.0061J	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 20:08	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 20:08	7440-43-9	
Chromium	0.0045J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 20:08	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 20:08	7440-48-4	
Lead	0.00017J	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 20:08	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 20:08	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	56.0	mg/L	10.0	10.0	1		03/19/21 18:45		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	5.3	mg/L	1.0	0.60	1		03/23/21 11:22	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		03/23/21 11:22	16984-48-8	
Sulfate	0.52J	mg/L	1.0	0.50	1		03/23/21 11:22	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWA-113		Lab ID: 92527612006		Collected: 03/16/21 12:50		Received: 03/17/21 13:10		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		03/22/21 11:59		
pH	6.14	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	8.6	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 19:44	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0011J	mg/L	0.0050	0.00078	1	04/01/21 10:56	04/05/21 20:25	7440-38-2	
Barium	0.054	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 20:25	7440-39-3	
Beryllium	0.00018J	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 20:25	7440-41-7	
Boron	0.011J	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 20:25	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 20:25	7440-43-9	
Chromium	0.0061	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 20:25	7440-47-3	
Cobalt	0.0013J	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 20:25	7440-48-4	
Lead	0.0016	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 20:25	7439-92-1	
Lithium	0.0026J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 20:25	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	99.0	mg/L	10.0	10.0	1		03/23/21 07:59		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1.6	mg/L	1.0	0.60	1		03/21/21 23:03	16887-00-6	
Fluoride	0.18	mg/L	0.10	0.050	1		03/21/21 23:03	16984-48-8	
Sulfate	7.7	mg/L	1.0	0.50	1		03/21/21 23:03	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Sample: HGWA-113 FILTERED **Lab ID: 92527612007** Collected: 03/16/21 12:50 Received: 03/17/21 13:10 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		03/22/21 11:59		
pH	6.14	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	8.4	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 19:49	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	04/01/21 10:56	04/05/21 20:30	7440-38-2	
Barium	0.034	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 20:30	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 20:30	7440-41-7	
Boron	0.010J	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 20:30	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 20:30	7440-43-9	
Chromium	0.0025J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 20:30	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 20:30	7440-48-4	
Lead	0.00022J	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 20:30	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 20:30	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	88.0	mg/L	10.0	10.0	1		03/23/21 07:59		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1.6	mg/L	1.0	0.60	1		03/21/21 23:44	16887-00-6	
Fluoride	0.17	mg/L	0.10	0.050	1		03/21/21 23:44	16984-48-8	
Sulfate	7.3	mg/L	1.0	0.50	1		03/21/21 23:44	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Sample: HGWC-101		Lab ID: 92527612008		Collected: 03/17/21 11:48		Received: 03/18/21 13:17		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		03/22/21 11:59		
pH	5.41	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	21.8	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:04	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	04/01/21 10:56	04/05/21 20:36	7440-38-2	
Barium	0.040	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 20:36	7440-39-3	
Beryllium	0.000059J	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 20:36	7440-41-7	
Boron	0.13	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 20:36	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 20:36	7440-43-9	
Chromium	0.00075J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 20:36	7440-47-3	
Cobalt	0.0023J	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 20:36	7440-48-4	
Lead	ND	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 20:36	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 20:36	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	213	mg/L	10.0	10.0	1		03/23/21 08:41		
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		03/23/21 07:11	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		03/23/21 07:11	16984-48-8	
Sulfate	107	mg/L	2.0	1.0	2		03/23/21 15:32	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWC-102 Lab ID: 92527612009 Collected: 03/17/21 14:25 Received: 03/18/21 13:17 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		03/22/21 11:59		
pH	5.78	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	111	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:08	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	04/01/21 10:56	04/05/21 20:42	7440-38-2	
Barium	0.031	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 20:42	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 20:42	7440-41-7	
Boron	2.7	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 20:42	7440-42-8	
Cadmium	0.00094	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 20:42	7440-43-9	
Chromium	ND	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 20:42	7440-47-3	
Cobalt	0.0012J	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 20:42	7440-48-4	
Lead	ND	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 20:42	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 20:42	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	626	mg/L	20.0	20.0	1		03/23/21 08:41		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6.9	mg/L	1.0	0.60	1		03/23/21 07:25	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		03/23/21 07:25	16984-48-8	
Sulfate	332	mg/L	7.0	3.5	7		03/23/21 15:47	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWC-109 Lab ID: 92527612010 Collected: 03/17/21 12:52 Received: 03/18/21 13:17 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		03/22/21 11:59		
pH	6.55	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	37.3	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:13	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0019J	mg/L	0.0050	0.00078	1	04/01/21 10:56	04/05/21 20:48	7440-38-2	
Barium	0.077	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 20:48	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 20:48	7440-41-7	
Boron	0.26	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 20:48	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 20:48	7440-43-9	
Chromium	ND	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 20:48	7440-47-3	
Cobalt	0.0030J	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 20:48	7440-48-4	
Lead	ND	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 20:48	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 20:48	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	171	mg/L	10.0	10.0	1		03/23/21 08:41		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	4.7	mg/L	1.0	0.60	1		03/23/21 07:38	16887-00-6	
Fluoride	0.089J	mg/L	0.10	0.050	1		03/23/21 07:38	16984-48-8	
Sulfate	28.3	mg/L	1.0	0.50	1		03/23/21 07:38	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: DUP-4		Lab ID: 92527612011		Collected: 03/17/21 00:00	Received: 03/18/21 13:17	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	109	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:18	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	04/01/21 10:56	04/05/21 20:53	7440-38-2	
Barium	0.030	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 20:53	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 20:53	7440-41-7	
Boron	2.7	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 20:53	7440-42-8	
Cadmium	0.00092	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 20:53	7440-43-9	
Chromium	0.10	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 20:53	7440-47-3	
Cobalt	0.0014J	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 20:53	7440-48-4	
Lead	ND	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 20:53	7439-92-1	
Lithium	0.0013J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 20:53	7439-93-2	
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA							
Total Dissolved Solids	612	mg/L	20.0	20.0	1		03/23/21 08:41		
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		03/23/21 08:19	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		03/23/21 08:19	16984-48-8	
Sulfate	336	mg/L	7.0	3.5	7		03/23/21 16:01	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWC-103		Lab ID: 92527612012		Collected: 03/18/21 11:53	Received: 03/19/21 13:40	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		03/22/21 11:59		
pH	5.51	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	83.7	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:23	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	04/01/21 10:56	04/05/21 20:59	7440-38-2	
Barium	0.042	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 20:59	7440-39-3	
Beryllium	0.000061J	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 20:59	7440-41-7	
Boron	2.4	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 20:59	7440-42-8	
Cadmium	0.00068	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 20:59	7440-43-9	
Chromium	0.0030J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 20:59	7440-47-3	
Cobalt	0.0021J	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 20:59	7440-48-4	
Lead	0.00024J	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 20:59	7439-92-1	
Lithium	0.0018J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 20:59	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	465	mg/L	10.0	10.0	1		03/25/21 11:10		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6.2	mg/L	1.0	0.60	1		03/26/21 00:16	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		03/26/21 00:16	16984-48-8	
Sulfate	286	mg/L	6.0	3.0	6		03/26/21 18:23	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWC-105		Lab ID: 92527612013		Collected: 03/18/21 12:46	Received: 03/19/21 13:40	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		03/22/21 11:59		
pH	6.57	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	97.7	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:27	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	04/01/21 10:56	04/05/21 21:05	7440-38-2	
Barium	0.082	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 21:05	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 21:05	7440-41-7	
Boron	1.5	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 21:05	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 21:05	7440-43-9	
Chromium	0.00058J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 21:05	7440-47-3	
Cobalt	0.00045J	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 21:05	7440-48-4	
Lead	0.000058J	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 21:05	7439-92-1	
Lithium	0.0042J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 21:05	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	410	mg/L	10.0	10.0	1		03/25/21 11:10		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	4.3	mg/L	1.0	0.60	1		03/26/21 00:30	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		03/26/21 00:30	16984-48-8	
Sulfate	196	mg/L	4.0	2.0	4		03/26/21 18:38	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWC-107 Lab ID: 92527612014 Collected: 03/18/21 18:01 Received: 03/19/21 13:40 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		03/22/21 11:59		
pH	6.20	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	56.0	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:32	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	04/01/21 10:56	04/05/21 21:11	7440-38-2	
Barium	0.041	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 21:11	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 21:11	7440-41-7	
Boron	0.92	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 21:11	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 21:11	7440-43-9	
Chromium	ND	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 21:11	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 21:11	7440-48-4	
Lead	0.000091J	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 21:11	7439-92-1	
Lithium	0.0011J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 21:11	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	255	mg/L	10.0	10.0	1		03/25/21 11:10		D6
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	3.2	mg/L	1.0	0.60	1		03/26/21 01:10	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		03/26/21 01:10	16984-48-8	
Sulfate	128	mg/L	3.0	1.5	3		03/26/21 18:54	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWC-118		Lab ID: 92527612015		Collected: 03/18/21 17:18	Received: 03/19/21 13:40	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		03/22/21 11:59		
pH	7.11	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	85.4	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:37	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0010J	mg/L	0.0050	0.00078	1	04/01/21 10:56	04/05/21 21:16	7440-38-2	
Barium	0.067	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 21:16	7440-39-3	
Beryllium	0.000093J	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 21:16	7440-41-7	
Boron	0.81	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 21:16	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 21:16	7440-43-9	
Chromium	0.0021J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 21:16	7440-47-3	
Cobalt	0.0012J	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 21:16	7440-48-4	
Lead	0.00088J	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 21:16	7439-92-1	
Lithium	0.0029J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 21:16	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	328	mg/L	10.0	10.0	1		03/25/21 11:10		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	4.3	mg/L	1.0	0.60	1		03/26/21 01:24	16887-00-6	
Fluoride	0.079J	mg/L	0.10	0.050	1		03/26/21 01:24	16984-48-8	
Sulfate	87.8	mg/L	1.0	0.50	1		03/26/21 01:24	14808-79-8	M1

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWC-118 FILTERED Lab ID: 92527612016 Collected: 03/18/21 17:18 Received: 03/19/21 13:40 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		03/22/21 11:59		
pH	7.11	Std. Units			1		03/22/21 11:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	86.2	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:42	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	04/01/21 10:56	04/05/21 21:33	7440-38-2	
Barium	0.062	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 21:33	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 21:33	7440-41-7	
Boron	0.78	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 21:33	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 21:33	7440-43-9	
Chromium	ND	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 21:33	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 21:33	7440-48-4	
Lead	ND	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 21:33	7439-92-1	
Lithium	0.0020J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 21:33	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	321	mg/L	10.0	10.0	1		03/25/21 11:10		
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		03/25/21 17:02	16887-00-6	
Fluoride	0.073J	mg/L	0.10	0.050	1		03/25/21 17:02	16984-48-8	
Sulfate	81.7	mg/L	1.0	0.50	1		03/25/21 17:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

Sample: HGWC-117 Lab ID: 92527612017 Collected: 03/19/21 11:45 Received: 03/22/21 15:41 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		03/22/21 17:08		
pH	6.14	Std. Units			1		03/22/21 17:08		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	87.3	mg/L	1.0	0.070	1	04/01/21 10:54	04/01/21 20:46	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	04/01/21 10:56	04/05/21 21:39	7440-38-2	
Barium	0.058	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 21:39	7440-39-3	
Beryllium	0.000081J	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 21:39	7440-41-7	
Boron	1.5	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 21:39	7440-42-8	
Cadmium	0.0010	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 21:39	7440-43-9	
Chromium	0.0010J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 21:39	7440-47-3	
Cobalt	0.011	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 21:39	7440-48-4	
Lead	0.00038J	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 21:39	7439-92-1	
Lithium	0.0035J	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 21:39	7439-93-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	371	mg/L	10.0	10.0	1		03/26/21 09:32		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	24.9	mg/L	1.0	0.60	1		03/25/21 17:31	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		03/25/21 17:31	16984-48-8	
Sulfate	162	mg/L	3.0	1.5	3		03/26/21 14:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Sample: FB-4		Lab ID: 92527612018		Collected: 03/19/21 00:00	Received: 03/22/21 15:41	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	04/01/21 10:54	04/01/21 21:06	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	04/01/21 10:56	04/05/21 21:51	7440-38-2	
Barium	ND	mg/L	0.0050	0.00071	1	04/01/21 10:56	04/05/21 21:51	7440-39-3	
Beryllium	ND	mg/L	0.00050	0.000046	1	04/01/21 10:56	04/05/21 21:51	7440-41-7	
Boron	ND	mg/L	0.040	0.0052	1	04/01/21 10:56	04/05/21 21:51	7440-42-8	
Cadmium	ND	mg/L	0.00050	0.00012	1	04/01/21 10:56	04/05/21 21:51	7440-43-9	
Chromium	0.00077J	mg/L	0.0050	0.00055	1	04/01/21 10:56	04/05/21 21:51	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	04/01/21 10:56	04/05/21 21:51	7440-48-4	
Lead	ND	mg/L	0.0010	0.000036	1	04/01/21 10:56	04/05/21 21:51	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	04/01/21 10:56	04/05/21 21:51	7439-93-2	
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		03/26/21 09:33		
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		03/25/21 18:44	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		03/25/21 18:44	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		03/25/21 18:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

QC Batch: 610583 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92527612001, 92527612002, 92527612003, 92527612004, 92527612005, 92527612006, 92527612007, 92527612008, 92527612009, 92527612010, 92527612011, 92527612012, 92527612013, 92527612014, 92527612015, 92527612016, 92527612017, 92527612018

METHOD BLANK: 3215315 Matrix: Water
Associated Lab Samples: 92527612001, 92527612002, 92527612003, 92527612004, 92527612005, 92527612006, 92527612007, 92527612008, 92527612009, 92527612010, 92527612011, 92527612012, 92527612013, 92527612014, 92527612015, 92527612016, 92527612017, 92527612018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	04/01/21 18:46	

LABORATORY CONTROL SAMPLE: 3215316

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215317 3215318

Parameter	Units	3215317		3215318		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92527612001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	53.2	1	1	56.8	55.7	366	256	75-125	2	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

QC Batch: 610584 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92527612001, 92527612002, 92527612003, 92527612004, 92527612005, 92527612006, 92527612007, 92527612008, 92527612009, 92527612010, 92527612011, 92527612012, 92527612013, 92527612014, 92527612015, 92527612016, 92527612017, 92527612018

METHOD BLANK: 3215320 Matrix: Water
Associated Lab Samples: 92527612001, 92527612002, 92527612003, 92527612004, 92527612005, 92527612006, 92527612007, 92527612008, 92527612009, 92527612010, 92527612011, 92527612012, 92527612013, 92527612014, 92527612015, 92527612016, 92527612017, 92527612018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00078	04/05/21 19:16	
Barium	mg/L	ND	0.0050	0.00071	04/05/21 19:16	
Beryllium	mg/L	ND	0.00050	0.000046	04/05/21 19:16	
Boron	mg/L	ND	0.040	0.0052	04/05/21 19:16	
Cadmium	mg/L	ND	0.00050	0.00012	04/05/21 19:16	
Chromium	mg/L	ND	0.0050	0.00055	04/05/21 19:16	
Cobalt	mg/L	ND	0.0050	0.00038	04/05/21 19:16	
Lead	mg/L	ND	0.0010	0.000036	04/05/21 19:16	
Lithium	mg/L	ND	0.030	0.00081	04/05/21 19:16	

LABORATORY CONTROL SAMPLE: 3215321

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	103	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.11	108	80-120	
Boron	mg/L	1	1.1	107	80-120	
Cadmium	mg/L	0.1	0.10	104	80-120	
Chromium	mg/L	0.1	0.10	104	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215322 3215323

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92527612001 Result	Spike Conc.	Spike Conc.	Conc.								
Arsenic	mg/L	ND	0.1	0.1	0.10	0.11	102	105	75-125	3	20		
Barium	mg/L	0.037	0.1	0.1	0.14	0.14	104	105	75-125	0	20		
Beryllium	mg/L	0.00014J	0.1	0.1	0.10	0.10	102	103	75-125	1	20		
Boron	mg/L	0.010J	1	1	1.0	1.0	100	100	75-125	0	20		
Cadmium	mg/L	ND	0.1	0.1	0.11	0.11	105	106	75-125	0	20		
Chromium	mg/L	0.0020J	0.1	0.1	0.11	0.11	104	103	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	103	103	75-125	0	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Parameter	Units	3215322		3215323		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92527612001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Lead	mg/L	0.0011	0.1	0.1	0.10	0.10	100	101	75-125	1	20		
Lithium	mg/L	0.0047J	0.1	0.1	0.11	0.11	101	103	75-125	2	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

QC Batch: 607316 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: 92527612001, 92527612002

METHOD BLANK: 3199480 Matrix: Water
Associated Lab Samples: 92527612001, 92527612002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	03/17/21 17:40	

LABORATORY CONTROL SAMPLE: 3199481

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	90-111	

SAMPLE DUPLICATE: 3199482

Parameter	Units	92527256010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	279	278	0	10	

SAMPLE DUPLICATE: 3199483

Parameter	Units	92526996006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	255	258	1	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

QC Batch:	608067	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: 92527612003, 92527612004, 92527612005

METHOD BLANK: 3203362 Matrix: Water

Associated Lab Samples: 92527612003, 92527612004, 92527612005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	03/19/21 18:44	

LABORATORY CONTROL SAMPLE: 3203363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	391	98	90-111	

SAMPLE DUPLICATE: 3203364

Parameter	Units	92527261009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	664	690	4	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

QC Batch: 608136

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: 92527612006, 92527612007

METHOD BLANK: 3203650

Matrix: Water

Associated Lab Samples: 92527612006, 92527612007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	03/23/21 07:58	

LABORATORY CONTROL SAMPLE: 3203651

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	414	104	90-111	

SAMPLE DUPLICATE: 3203652

Parameter	Units	92527612006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	99.0	97.0	2	10	

SAMPLE DUPLICATE: 3203653

Parameter	Units	92528339001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	952	1020	7	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

QC Batch: 608443 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: 92527612008, 92527612009, 92527612010, 92527612011

METHOD BLANK: 3204949 Matrix: Water
Associated Lab Samples: 92527612008, 92527612009, 92527612010, 92527612011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	03/23/21 08:29	

LABORATORY CONTROL SAMPLE: 3204950

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	398	100	90-111	

SAMPLE DUPLICATE: 3204951

Parameter	Units	92527612008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	213	225	5	10	

SAMPLE DUPLICATE: 3204952

Parameter	Units	92528787024 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	47.0	72.0	42	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

QC Batch:	608913	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: 92527612012, 92527612013, 92527612014, 92527612015, 92527612016

METHOD BLANK: 3207223 Matrix: Water

Associated Lab Samples: 92527612012, 92527612013, 92527612014, 92527612015, 92527612016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	03/25/21 11:08	

LABORATORY CONTROL SAMPLE: 3207224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	377	94	90-111	

SAMPLE DUPLICATE: 3207225

Parameter	Units	92528809001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1170	1110	5	10	

SAMPLE DUPLICATE: 3207226

Parameter	Units	92527612014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	255	213	18	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

QC Batch: 609221 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: 92527612017, 92527612018

METHOD BLANK: 3208754 Matrix: Water
Associated Lab Samples: 92527612017, 92527612018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	03/26/21 09:30	

LABORATORY CONTROL SAMPLE: 3208755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	385	96	90-111	

SAMPLE DUPLICATE: 3208757

Parameter	Units	92527612017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	371	403	8	10	

SAMPLE DUPLICATE: 3208759

Parameter	Units	92528787009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	250	243	3	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

QC Batch: 607751 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92527612001, 92527612002

METHOD BLANK: 3201757 Matrix: Water

Associated Lab Samples: 92527612001, 92527612002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/19/21 17:15	
Fluoride	mg/L	ND	0.10	0.050	03/19/21 17:15	
Sulfate	mg/L	ND	1.0	0.50	03/19/21 17:15	

LABORATORY CONTROL SAMPLE: 3201758

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.2	100	90-110	
Fluoride	mg/L	2.5	2.3	91	90-110	
Sulfate	mg/L	50	50.2	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3201759 3201760

Parameter	Units	92528475003		3201759		3201760		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	2510	2520	50	50	2520	2520	27	27	90-110	0	10	M6
Fluoride	mg/L	4.6	12.1	2.5	2.5	12.1	11.9	302	294	90-110	2	10	M6
Sulfate	mg/L	1530	1480	50	50	1510	1480	-49	-112	90-110	2	10	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3201761 3201762

Parameter	Units	92527256007		3201761		3201762		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	5.9	58.9	50	50	58.9	57.5	106	103	90-110	2	10	
Fluoride	mg/L	ND	2.3	2.5	2.5	2.3	2.3	91	90	90-110	1	10	
Sulfate	mg/L	50.4	102	50	50	102	101	103	101	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.: 92527612

QC Batch: 607758 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92527612003, 92527612004, 92527612005

METHOD BLANK: 3201801 Matrix: Water
Associated Lab Samples: 92527612003, 92527612004, 92527612005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/20/21 19:43	
Fluoride	mg/L	ND	0.10	0.050	03/20/21 19:43	
Sulfate	mg/L	ND	1.0	0.50	03/20/21 19:43	

LABORATORY CONTROL SAMPLE: 3201802

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	2.6	103	90-110	
Sulfate	mg/L	50	53.0	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3201803 3201804

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92526996007	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	8.0	50	50	57.8	58.5	99	101	90-110	1	10		
Fluoride	mg/L	0.058J	2.5	2.5	2.5	2.6	98	100	90-110	2	10		
Sulfate	mg/L	154	50	50	255	259	201	210	90-110	2	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3201805 3201806

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92527261012	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	3.2	50	50	53.9	53.4	101	100	90-110	1	10		
Fluoride	mg/L	0.83	2.5	2.5	3.5	3.5	107	106	90-110	1	10		
Sulfate	mg/L	166	50	50	183	208	33	84	90-110	13	10	M1,R1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

QC Batch: 607984	Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993	Analysis Description: 300.0 IC Anions
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92527612006, 92527612007

METHOD BLANK: 3202745 Matrix: Water

Associated Lab Samples: 92527612006, 92527612007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/21/21 19:26	
Fluoride	mg/L	ND	0.10	0.050	03/21/21 19:26	
Sulfate	mg/L	ND	1.0	0.50	03/21/21 19:26	

LABORATORY CONTROL SAMPLE: 3202746

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.2	104	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	50	52.8	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3202747 3202748

Parameter	Units	92527234030		MS		MSD		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result								
Chloride	mg/L	ND	50	50	51.8	50.4	104	101	101	101	101	90-110	3	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.5	104	101	101	101	101	90-110	3	10	
Sulfate	mg/L	ND	50	50	52.2	50.8	104	102	102	102	102	90-110	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3202749 3202750

Parameter	Units	92527612006		MS		MSD		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result								
Chloride	mg/L	1.6	50	50	52.6	51.8	102	100	100	100	100	90-110	1	10	
Fluoride	mg/L	0.18	2.5	2.5	2.7	2.7	99	102	102	102	102	90-110	2	10	
Sulfate	mg/L	7.7	50	50	57.9	57.5	100	100	100	100	100	90-110	1	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

QC Batch: 608285 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92527612008, 92527612009, 92527612010, 92527612011

METHOD BLANK: 3204508 Matrix: Water
Associated Lab Samples: 92527612008, 92527612009, 92527612010, 92527612011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/23/21 04:02	
Fluoride	mg/L	ND	0.10	0.050	03/23/21 04:02	
Sulfate	mg/L	ND	1.0	0.50	03/23/21 04:02	

LABORATORY CONTROL SAMPLE: 3204509

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	2.5	100	90-110	
Sulfate	mg/L	50	51.8	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3204510 3204511

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92528339002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	53.4	50	50	91.2	90.1	75	73	90-110	1	10	M6	
Fluoride	mg/L	0.74	2.5	2.5	3.3	3.2	102	100	90-110	2	10		
Sulfate	mg/L	457	50	50	503	503	93	93	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3204512 3204513

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92527612010	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	4.7	50	50	58.1	56.8	107	104	90-110	2	10		
Fluoride	mg/L	0.089J	2.5	2.5	2.8	2.7	107	104	90-110	2	10		
Sulfate	mg/L	28.3	50	50	80.9	79.7	105	103	90-110	2	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

QC Batch: 608857 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92527612012, 92527612013, 92527612014, 92527612015

METHOD BLANK: 3206837 Matrix: Water
Associated Lab Samples: 92527612012, 92527612013, 92527612014, 92527612015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/25/21 18:48	
Fluoride	mg/L	ND	0.10	0.050	03/25/21 18:48	
Sulfate	mg/L	ND	1.0	0.50	03/25/21 18:48	

LABORATORY CONTROL SAMPLE: 3206838

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.4	105	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	50	53.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3206839 3206840

Parameter	Units	92527256017		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result							
Chloride	mg/L	138	50	50	182	183	88	90	90-110	1	10	M6		
Fluoride	mg/L	0.057J	2.5	2.5	2.8	2.8	108	108	90-110	0	10			
Sulfate	mg/L	447	50	50	490	492	86	91	90-110	0	10	M6		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3206841 3206842

Parameter	Units	92527612015		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result							
Chloride	mg/L	4.3	50	50	56.2	56.5	104	104	90-110	0	10			
Fluoride	mg/L	0.079J	2.5	2.5	2.7	2.7	105	106	90-110	1	10			
Sulfate	mg/L	87.8	50	50	128	129	81	82	90-110	0	10	M1		

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QUALITY CONTROL DATA

Project: HAMMOND AP-4 SEMIANNUAL
Pace Project No.: 92527612

QC Batch: 608960 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92527612016, 92527612017, 92527612018

METHOD BLANK: 3207640 Matrix: Water
Associated Lab Samples: 92527612016, 92527612017, 92527612018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/25/21 13:06	
Fluoride	mg/L	ND	0.10	0.050	03/25/21 13:06	
Sulfate	mg/L	ND	1.0	0.50	03/25/21 13:06	

LABORATORY CONTROL SAMPLE: 3207641

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.3	103	90-110	
Fluoride	mg/L	2.5	2.5	98	90-110	
Sulfate	mg/L	50	51.7	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3207642 3207643

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92529156001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	24.2	50	50	71.9	72.2	95	96	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	98	98	90-110	0	10		
Sulfate	mg/L	ND	50	50	71.0	71.3	142	142	90-110	0	10	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3207644 3207645

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92527612017	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	24.9	50	50	76.4	76.6	103	103	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	103	102	90-110	1	10		
Sulfate	mg/L	162	50	50	209	207	93	90	90-110	1	10		

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QUALIFIERS

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

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.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92527612001	HGWA-111				
92527612002	HGWA-111 FILTERED				
92527612003	HGWA-47				
92527612004	HGWA-48D				
92527612005	HGWA-112				
92527612006	HGWA-113				
92527612007	HGWA-113 FILTERED				
92527612008	HGWC-101				
92527612009	HGWC-102				
92527612010	HGWC-109				
92527612012	HGWC-103				
92527612013	HGWC-105				
92527612014	HGWC-107				
92527612015	HGWC-118				
92527612016	HGWC-118 FILTERED				
92527612017	HGWC-117				
92527612001	HGWA-111	EPA 3010A	610583	EPA 6010D	610875
92527612002	HGWA-111 FILTERED	EPA 3010A	610583	EPA 6010D	610875
92527612003	HGWA-47	EPA 3010A	610583	EPA 6010D	610875
92527612004	HGWA-48D	EPA 3010A	610583	EPA 6010D	610875
92527612005	HGWA-112	EPA 3010A	610583	EPA 6010D	610875
92527612006	HGWA-113	EPA 3010A	610583	EPA 6010D	610875
92527612007	HGWA-113 FILTERED	EPA 3010A	610583	EPA 6010D	610875
92527612008	HGWC-101	EPA 3010A	610583	EPA 6010D	610875
92527612009	HGWC-102	EPA 3010A	610583	EPA 6010D	610875
92527612010	HGWC-109	EPA 3010A	610583	EPA 6010D	610875
92527612011	DUP-4	EPA 3010A	610583	EPA 6010D	610875
92527612012	HGWC-103	EPA 3010A	610583	EPA 6010D	610875
92527612013	HGWC-105	EPA 3010A	610583	EPA 6010D	610875
92527612014	HGWC-107	EPA 3010A	610583	EPA 6010D	610875
92527612015	HGWC-118	EPA 3010A	610583	EPA 6010D	610875
92527612016	HGWC-118 FILTERED	EPA 3010A	610583	EPA 6010D	610875
92527612017	HGWC-117	EPA 3010A	610583	EPA 6010D	610875
92527612018	FB-4	EPA 3010A	610583	EPA 6010D	610875
92527612001	HGWA-111	EPA 3005A	610584	EPA 6020B	610872
92527612002	HGWA-111 FILTERED	EPA 3005A	610584	EPA 6020B	610872
92527612003	HGWA-47	EPA 3005A	610584	EPA 6020B	610872
92527612004	HGWA-48D	EPA 3005A	610584	EPA 6020B	610872
92527612005	HGWA-112	EPA 3005A	610584	EPA 6020B	610872
92527612006	HGWA-113	EPA 3005A	610584	EPA 6020B	610872
92527612007	HGWA-113 FILTERED	EPA 3005A	610584	EPA 6020B	610872
92527612008	HGWC-101	EPA 3005A	610584	EPA 6020B	610872
92527612009	HGWC-102	EPA 3005A	610584	EPA 6020B	610872
92527612010	HGWC-109	EPA 3005A	610584	EPA 6020B	610872
92527612011	DUP-4	EPA 3005A	610584	EPA 6020B	610872
92527612012	HGWC-103	EPA 3005A	610584	EPA 6020B	610872
92527612013	HGWC-105	EPA 3005A	610584	EPA 6020B	610872
92527612014	HGWC-107	EPA 3005A	610584	EPA 6020B	610872

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SEMIANNUAL

Pace Project No.: 92527612

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92527612015	HGWC-118	EPA 3005A	610584	EPA 6020B	610872
92527612016	HGWC-118 FILTERED	EPA 3005A	610584	EPA 6020B	610872
92527612017	HGWC-117	EPA 3005A	610584	EPA 6020B	610872
92527612018	FB-4	EPA 3005A	610584	EPA 6020B	610872
92527612001	HGWA-111	SM 2450C-2011	607316		
92527612002	HGWA-111 FILTERED	SM 2450C-2011	607316		
92527612003	HGWA-47	SM 2450C-2011	608067		
92527612004	HGWA-48D	SM 2450C-2011	608067		
92527612005	HGWA-112	SM 2450C-2011	608067		
92527612006	HGWA-113	SM 2450C-2011	608136		
92527612007	HGWA-113 FILTERED	SM 2450C-2011	608136		
92527612008	HGWC-101	SM 2450C-2011	608443		
92527612009	HGWC-102	SM 2450C-2011	608443		
92527612010	HGWC-109	SM 2450C-2011	608443		
92527612011	DUP-4	SM 2450C-2011	608443		
92527612012	HGWC-103	SM 2450C-2011	608913		
92527612013	HGWC-105	SM 2450C-2011	608913		
92527612014	HGWC-107	SM 2450C-2011	608913		
92527612015	HGWC-118	SM 2450C-2011	608913		
92527612016	HGWC-118 FILTERED	SM 2450C-2011	608913		
92527612017	HGWC-117	SM 2450C-2011	609221		
92527612018	FB-4	SM 2450C-2011	609221		
92527612001	HGWA-111	EPA 300.0 Rev 2.1 1993	607751		
92527612002	HGWA-111 FILTERED	EPA 300.0 Rev 2.1 1993	607751		
92527612003	HGWA-47	EPA 300.0 Rev 2.1 1993	607758		
92527612004	HGWA-48D	EPA 300.0 Rev 2.1 1993	607758		
92527612005	HGWA-112	EPA 300.0 Rev 2.1 1993	607758		
92527612006	HGWA-113	EPA 300.0 Rev 2.1 1993	607984		
92527612007	HGWA-113 FILTERED	EPA 300.0 Rev 2.1 1993	607984		
92527612008	HGWC-101	EPA 300.0 Rev 2.1 1993	608285		
92527612009	HGWC-102	EPA 300.0 Rev 2.1 1993	608285		
92527612010	HGWC-109	EPA 300.0 Rev 2.1 1993	608285		
92527612011	DUP-4	EPA 300.0 Rev 2.1 1993	608285		
92527612012	HGWC-103	EPA 300.0 Rev 2.1 1993	608857		
92527612013	HGWC-105	EPA 300.0 Rev 2.1 1993	608857		
92527612014	HGWC-107	EPA 300.0 Rev 2.1 1993	608857		
92527612015	HGWC-118	EPA 300.0 Rev 2.1 1993	608857		
92527612016	HGWC-118 FILTERED	EPA 300.0 Rev 2.1 1993	608960		
92527612017	HGWC-117	EPA 300.0 Rev 2.1 1993	608960		
92527612018	FB-4	EPA 300.0 Rev 2.1 1993	608960		

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Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: **October 28, 2020**
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
Upon Receipt

Client Name:

GA Power

Project #

W0# : 92527612

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



92527612

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *ST/2/20*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: 230 Type of Ice: Wet Blue None

Cooler Temp: 1.8 Correction Factor: Add/Subtract (°C) 0.0

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.8

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Sufficient Volume?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.	
Sample Labels Match?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix:	<i>W</i>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
 Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

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

Project #

WO# : 92527612

PM: KLH1

Due Date: 03/26/21

CLIENT: GA-GA Power

Exceptions: VOA, Coliform, TOC, Oil and Grease, DR0/8015 (water) DOC, LLHg

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

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFLU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
3	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

pH Adjustment Log for Preserved Samples

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

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



CHAIN-OF-CUSTODY / Analytical Request Document
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Company: GA Power Address: Atlanta, GA

Section B Required Project Information: Report To: SCS Contacts Copy To: Geosyntec Contacts

Section C Invoice Information: Attention: Southern Co. Company Name: Address: Purchase Order No.: Project Name: Plant Hammond AP-4 Semiannual Project Number: GW6581

Price Date: Price Project: Kevin Herring Price Profile #: 10838-12

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Page: 2 of 2

Section D Required Client Information: Valid Matrix Codes: **SAMPLE ID** (A-Z, 0-9, /, -) Sample IDs MUST BE UNIQUE

Matrix Code: WT G DATE: 3/19/01 TIME: 5:23

Sample Type: G-GRAB C-COMP

Collected: Composite

Sample Temp at Collection: Unpreserved H₂SO₄ HNO₃ HCl NaOH Na₂S₂O₃ Methanol Other

Analysis Test: Chloride, Fluoride, Sulfate (N) App. III & IV Metals* (N) RAD 228/228 (N) TDS (N)

Requested Analysis Filtered (Y/N)

Residual Chlorine (Y/N)

Temp in °C: 3.5 Received on Ice (Y/N): Y Custody Sealed Cooler (Y/N): N Samples Intact (Y/N): Y

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE	SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	SAMPLE CONDITIONS
1	HGWC-118	DRINKING WATER WATER WATER PRODUCT OIL WASTE AIR OTHER TSS	WT G	G	3/19/01	5:23			5	2		X		N	
2	Dup-4		WT G	G					5	2		X		N	
3	FB-4 Last Sample		WT G	G	3/19/01	5:23			5	2		X		N	
4															
5															
6															
7															
8															
9															
10															
11															
12															

ADDITIONAL COMMENTS

Thomas Hesketh/James
 Lynn Williams/Price

RELINQUISHED BY / AFFILIATION

ACCEPTED BY / AFFILIATION

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Robert Fairbank
 SIGNATURE of SAMPLER: [Signature]

DATE Signed (MM/DD/YYYY): 3/16/01

DATE Signed (MM/DD/YYYY): 3/16/01

Temp in °C: 3.5 Received on Ice (Y/N): Y Custody Sealed Cooler (Y/N): N Samples Intact (Y/N): Y

Plant Hammond AP-4 Semiannual Project Number: GW6581

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to his charges of 1.5% per month for any invoices not paid within 30 days.

FALL-Q-0207REV.07, 15-Feb-2007

April 15, 2021

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

RE: Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92527605

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 12, 2021 and March 22, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - 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 Company
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-4 SEMIANNUAL RAD5
Pace Project No.: 92527605

Pace Analytical Services Pennsylvania

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92527605

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92527605001	HGWA-111	Water	03/11/21 16:25	03/12/21 13:43
92527605002	HGWA-111 FILTERED	Water	03/11/21 16:25	03/12/21 13:43
92527605003	HGWA-47	Water	03/12/21 15:02	03/15/21 12:00
92527605004	HGWA-48D	Water	03/12/21 12:42	03/15/21 12:00
92527605005	HGWA-112	Water	03/12/21 13:30	03/15/21 12:00
92527605006	HGWA-113	Water	03/16/21 12:50	03/17/21 13:10
92527605007	HGWA-113 FILTERED	Water	03/16/21 12:50	03/17/21 13:10
92527605008	HGWC-101	Water	03/17/21 11:48	03/18/21 13:17
92527605009	HGWC-102	Water	03/17/21 14:25	03/18/21 13:17
92527605010	HGWC-109	Water	03/17/21 12:52	03/18/21 13:17
92527605011	DUP-4	Water	03/17/21 00:00	03/18/21 13:17
92527605012	HGWC-103	Water	03/18/21 11:53	03/19/21 13:40
92527605013	HGWC-105	Water	03/18/21 12:46	03/19/21 13:40
92527605014	HGWC-107	Water	03/18/21 18:01	03/19/21 13:40
92527605015	HGWC-118	Water	03/18/21 17:18	03/19/21 13:40
92527605016	HGWC-118 FILTERED	Water	03/18/21 17:18	03/19/21 13:40
92527605017	HGWC-117	Water	03/19/21 11:45	03/22/21 15:41
92527605018	FB-4	Water	03/19/21 00:00	03/22/21 15:41

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92527605

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92527605001	HGWA-111	EPA 9315	CLA	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92527605002	HGWA-111 FILTERED	EPA 9315	CLA	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92527605003	HGWA-47	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92527605004	HGWA-48D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92527605005	HGWA-112	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92527605006	HGWA-113	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92527605007	HGWA-113 FILTERED	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92527605008	HGWC-101	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92527605009	HGWC-102	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92527605010	HGWC-109	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92527605011	DUP-4	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92527605012	HGWC-103	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92527605013	HGWC-105	EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92527605014	HGWC-107	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
92527605015	HGWC-118	Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92527605016	HGWC-118 FILTERED	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92527605017	HGWC-117	EPA 9320	VAL	1	PASI-PA
		EPA 9315	CLA	1	PASI-PA
92527605018	FB-4	EPA 9315	CLA	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92527605

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92527605001	HGWA-111					
EPA 9315	Radium-226	0.178 ± 0.158 (0.289) C:91% T:NA	pCi/L		03/29/21 07:35	
EPA 9320	Radium-228	0.176 ± 0.837 (1.89) C:61% T:89%	pCi/L		04/09/21 19:48	
Total Radium Calculation	Total Radium	0.354 ± 0.995 (2.18)	pCi/L		04/13/21 15:22	
92527605002	HGWA-111 FILTERED					
EPA 9315	Radium-226	0.0552 ± 0.0999 (0.226) C:101% T:NA	pCi/L		03/29/21 07:36	
EPA 9320	Radium-228	0.636 ± 0.783 (1.66) C:63% T:86%	pCi/L		04/09/21 19:48	
Total Radium Calculation	Total Radium	0.691 ± 0.883 (1.89)	pCi/L		04/13/21 15:22	
92527605003	HGWA-47					
EPA 9315	Radium-226	-0.0152 ± 0.0974 (0.292) C:84% T:NA	pCi/L		04/05/21 07:59	
EPA 9320	Radium-228	-0.155 ± 0.337 (0.817) C:69% T:93%	pCi/L		04/12/21 14:35	
Total Radium Calculation	Total Radium	0.000 ± 0.434 (1.11)	pCi/L		04/14/21 11:08	
92527605004	HGWA-48D					
EPA 9315	Radium-226	0.242 ± 0.172 (0.275) C:89% T:NA	pCi/L		04/05/21 07:59	
EPA 9320	Radium-228	0.587 ± 0.490 (0.987) C:68% T:85%	pCi/L		04/12/21 14:35	
Total Radium Calculation	Total Radium	0.829 ± 0.662 (1.26)	pCi/L		04/14/21 11:08	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92527605005	HGWA-112					
EPA 9315	Radium-226	0.164 ± 0.142 (0.245)	pCi/L		04/05/21 07:59	
EPA 9320	Radium-228	C:91% T:NA -0.00811 ± 0.372 (0.862)	pCi/L		04/12/21 14:36	
Total Radium Calculation	Total Radium	C:68% T:96% 0.164 ± 0.514 (1.11)	pCi/L		04/14/21 11:08	
92527605006	HGWA-113					
EPA 9315	Radium-226	0.294 ± 0.131 (0.165)	pCi/L		04/05/21 12:44	
EPA 9320	Radium-228	C:87% T:NA 0.265 ± 0.831 (1.86)	pCi/L		04/09/21 19:48	
Total Radium Calculation	Total Radium	C:63% T:83% 0.559 ± 0.962 (2.03)	pCi/L		04/14/21 13:05	
92527605007	HGWA-113 FILTERED					
EPA 9315	Radium-226	0.0762 ± 0.0911 (0.186)	pCi/L		04/05/21 12:44	
EPA 9320	Radium-228	C:95% T:NA -0.720 ± 0.783 (1.89)	pCi/L		04/09/21 19:48	
Total Radium Calculation	Total Radium	C:65% T:87% 0.0762 ± 0.874 (2.08)	pCi/L		04/14/21 13:05	
92527605008	HGWC-101					
EPA 9315	Radium-226	0.248 ± 0.121 (0.160)	pCi/L		04/05/21 16:08	
EPA 9320	Radium-228	C:84% T:NA -0.246 ± 0.376 (0.927)	pCi/L		04/09/21 15:25	
Total Radium Calculation	Total Radium	C:66% T:79% 0.248 ± 0.497 (1.09)	pCi/L		04/14/21 15:46	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92527605009	HGWC-102					
EPA 9315	Radium-226	-0.00353 ± 0.0726 (0.187)	pCi/L		04/05/21 19:39	
EPA 9320	Radium-228	C:84% T:NA 0.401 ± 0.400 (0.826)	pCi/L		04/12/21 11:35	
Total Radium Calculation	Total Radium	C:68% T:85% 0.401 ± 0.473 (1.01)	pCi/L		04/14/21 15:46	
92527605010	HGWC-109					
EPA 9315	Radium-226	0.138 ± 0.108 (0.193)	pCi/L		04/05/21 19:39	
EPA 9320	Radium-228	C:78% T:NA 0.418 ± 0.364 (0.736)	pCi/L		04/12/21 11:35	
Total Radium Calculation	Total Radium	C:71% T:89% 0.556 ± 0.472 (0.929)	pCi/L		04/14/21 15:46	
92527605011	DUP-4					
EPA 9315	Radium-226	0.221 ± 0.116 (0.165)	pCi/L		04/05/21 19:39	
EPA 9320	Radium-228	C:79% T:NA 0.171 ± 0.367 (0.812)	pCi/L		04/12/21 11:35	
Total Radium Calculation	Total Radium	C:70% T:85% 0.392 ± 0.483 (0.977)	pCi/L		04/14/21 15:46	
92527605012	HGWC-103					
EPA 9315	Radium-226	0.0742 ± 0.0886 (0.181)	pCi/L		04/05/21 19:39	
EPA 9320	Radium-228	C:92% T:NA 0.200 ± 0.389 (0.855)	pCi/L		04/12/21 11:35	
Total Radium Calculation	Total Radium	C:68% T:88% 0.274 ± 0.478 (1.04)	pCi/L		04/14/21 15:46	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92527605013	HGWC-105					
EPA 9315	Radium-226	0.107 ± 0.0987 (0.187)	pCi/L		04/05/21 19:39	
EPA 9320	Radium-228	C:80% T:NA 0.145 ± 0.367 (0.820)	pCi/L		04/12/21 11:35	
Total Radium Calculation	Total Radium	C:70% T:79% 0.252 ± 0.466 (1.01)	pCi/L		04/14/21 15:46	
92527605014	HGWC-107					
EPA 9315	Radium-226	0.0611 ± 0.0775 (0.158)	pCi/L		04/05/21 19:39	
EPA 9320	Radium-228	C:84% T:NA 0.0841 ± 0.291 (0.660)	pCi/L		04/12/21 11:36	
Total Radium Calculation	Total Radium	C:67% T:94% 0.145 ± 0.369 (0.818)	pCi/L		04/14/21 15:46	
92527605015	HGWC-118					
EPA 9315	Radium-226	-0.0147 ± 0.261 (0.660)	pCi/L		04/05/21 07:54	
EPA 9320	Radium-228	C:87% T:NA 0.323 ± 0.450 (0.966)	pCi/L		04/12/21 11:35	
Total Radium Calculation	Total Radium	C:67% T:77% 0.323 ± 0.711 (1.63)	pCi/L		04/14/21 15:46	
92527605016	HGWC-118 FILTERED					
EPA 9315	Radium-226	0.0919 ± 0.201 (0.469)	pCi/L		04/05/21 07:54	
EPA 9320	Radium-228	C:86% T:NA 0.686 ± 0.494 (0.978)	pCi/L		04/12/21 11:33	
Total Radium Calculation	Total Radium	C:71% T:83% 0.778 ± 0.695 (1.45)	pCi/L		04/14/21 15:46	

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SUMMARY OF DETECTION

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92527605017	HGWC-117					
EPA 9315	Radium-226	0.218 ± 0.374 (0.848)	pCi/L		04/09/21 09:15	
EPA 9320	Radium-228	C:91% T:NA 0.0846 ± 0.425 (0.968) C:63% T:85%	pCi/L		04/13/21 11:58	
92527605018	FB-4					
EPA 9315	Radium-226	-0.106 ± 0.257 (0.730)	pCi/L		04/09/21 09:15	
EPA 9320	Radium-228	C:91% T:NA 0.116 ± 0.380 (0.856) C:61% T:96%	pCi/L		04/13/21 11:58	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-111 Lab ID: 92527605001 Collected: 03/11/21 16:25 Received: 03/12/21 13:43 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.178 ± 0.158 (0.289) C:91% T:NA	pCi/L	03/29/21 07:35	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.176 ± 0.837 (1.89) C:61% T:89%	pCi/L	04/09/21 19:48	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.354 ± 0.995 (2.18)	pCi/L	04/13/21 15:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-111 FILTERED Lab ID: 92527605002 Collected: 03/11/21 16:25 Received: 03/12/21 13:43 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0552 ± 0.0999 (0.226) C:101% T:NA	pCi/L	03/29/21 07:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.636 ± 0.783 (1.66) C:63% T:86%	pCi/L	04/09/21 19:48	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.691 ± 0.883 (1.89)	pCi/L	04/13/21 15:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-47 Lab ID: 92527605003 Collected: 03/12/21 15:02 Received: 03/15/21 12:00 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	-0.0152 ± 0.0974 (0.292) C:84% T:NA	pCi/L	04/05/21 07:59	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.155 ± 0.337 (0.817) C:69% T:93%	pCi/L	04/12/21 14:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.000 ± 0.434 (1.11)	pCi/L	04/14/21 11:08	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-48D Lab ID: 92527605004 Collected: 03/12/21 12:42 Received: 03/15/21 12:00 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.242 ± 0.172 (0.275) C:89% T:NA	pCi/L	04/05/21 07:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.587 ± 0.490 (0.987) C:68% T:85%	pCi/L	04/12/21 14:35	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.829 ± 0.662 (1.26)	pCi/L	04/14/21 11:08	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-112 Lab ID: 92527605005 Collected: 03/12/21 13:30 Received: 03/15/21 12:00 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.164 ± 0.142 (0.245) C:91% T:NA	pCi/L	04/05/21 07:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.00811 ± 0.372 (0.862) C:68% T:96%	pCi/L	04/12/21 14:36	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.164 ± 0.514 (1.11)	pCi/L	04/14/21 11:08	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-113 Lab ID: 92527605006 Collected: 03/16/21 12:50 Received: 03/17/21 13:10 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.294 ± 0.131 (0.165) C:87% T:NA	pCi/L	04/05/21 12:44	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.265 ± 0.831 (1.86) C:63% T:83%	pCi/L	04/09/21 19:48	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.559 ± 0.962 (2.03)	pCi/L	04/14/21 13:05	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Sample: HGWA-113 FILTERED **Lab ID: 92527605007** Collected: 03/16/21 12:50 Received: 03/17/21 13:10 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	0.0762 ± 0.0911 (0.186) C:95% T:NA	pCi/L	04/05/21 12:44	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.720 ± 0.783 (1.89) C:65% T:87%	pCi/L	04/09/21 19:48	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.0762 ± 0.874 (2.08)	pCi/L	04/14/21 13:05	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-101 Lab ID: 92527605008 Collected: 03/17/21 11:48 Received: 03/18/21 13:17 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.248 ± 0.121 (0.160) C:84% T:NA	pCi/L	04/05/21 16:08	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.246 ± 0.376 (0.927) C:66% T:79%	pCi/L	04/09/21 15:25	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.248 ± 0.497 (1.09)	pCi/L	04/14/21 15:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-102 Lab ID: 92527605009 Collected: 03/17/21 14:25 Received: 03/18/21 13:17 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	-0.00353 ± 0.0726 (0.187) C:84% T:NA	pCi/L	04/05/21 19:39	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.401 ± 0.400 (0.826) C:68% T:85%	pCi/L	04/12/21 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.401 ± 0.473 (1.01)	pCi/L	04/14/21 15:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-109 Lab ID: 92527605010 Collected: 03/17/21 12:52 Received: 03/18/21 13:17 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.138 ± 0.108 (0.193) C:78% T:NA	pCi/L	04/05/21 19:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.418 ± 0.364 (0.736) C:71% T:89%	pCi/L	04/12/21 11:35	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.556 ± 0.472 (0.929)	pCi/L	04/14/21 15:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Sample: DUP-4 **Lab ID: 92527605011** Collected: 03/17/21 00:00 Received: 03/18/21 13:17 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.221 ± 0.116 (0.165) C:79% T:NA	pCi/L	04/05/21 19:39	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.171 ± 0.367 (0.812) C:70% T:85%	pCi/L	04/12/21 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.392 ± 0.483 (0.977)	pCi/L	04/14/21 15:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-103 Lab ID: 92527605012 Collected: 03/18/21 11:53 Received: 03/19/21 13:40 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0742 ± 0.0886 (0.181) C:92% T:NA	pCi/L	04/05/21 19:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.200 ± 0.389 (0.855) C:68% T:88%	pCi/L	04/12/21 11:35	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.274 ± 0.478 (1.04)	pCi/L	04/14/21 15:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-105 Lab ID: 92527605013 Collected: 03/18/21 12:46 Received: 03/19/21 13:40 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.107 ± 0.0987 (0.187) C:80% T:NA	pCi/L	04/05/21 19:39	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.145 ± 0.367 (0.820) C:70% T:79%	pCi/L	04/12/21 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.252 ± 0.466 (1.01)	pCi/L	04/14/21 15:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-107 Lab ID: 92527605014 Collected: 03/18/21 18:01 Received: 03/19/21 13:40 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0611 ± 0.0775 (0.158) C:84% T:NA	pCi/L	04/05/21 19:39	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.0841 ± 0.291 (0.660) C:67% T:94%	pCi/L	04/12/21 11:36	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.145 ± 0.369 (0.818)	pCi/L	04/14/21 15:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-118 Lab ID: 92527605015 Collected: 03/18/21 17:18 Received: 03/19/21 13:40 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	-0.0147 ± 0.261 (0.660) C:87% T:NA	pCi/L	04/05/21 07:54	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.323 ± 0.450 (0.966) C:67% T:77%	pCi/L	04/12/21 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.323 ± 0.711 (1.63)	pCi/L	04/14/21 15:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Sample: HGWC-118 FILTERED **Lab ID: 92527605016** Collected: 03/18/21 17:18 Received: 03/19/21 13:40 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	0.0919 ± 0.201 (0.469) C:86% T:NA	pCi/L	04/05/21 07:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.686 ± 0.494 (0.978) C:71% T:83%	pCi/L	04/12/21 11:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.778 ± 0.695 (1.45)	pCi/L	04/14/21 15:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Sample: HGWC-117 **Lab ID: 92527605017** Collected: 03/19/21 11:45 Received: 03/22/21 15:41 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	0.218 ± 0.374 (0.848) C:91% T:NA	pCi/L	04/09/21 09:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.0846 ± 0.425 (0.968) C:63% T:85%	pCi/L	04/13/21 11:58	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Sample: FB-4 **Lab ID: 92527605018** Collected: 03/19/21 00:00 Received: 03/22/21 15:41 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	-0.106 ± 0.257 (0.730) C:91% T:NA	pCi/L	04/09/21 09:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.116 ± 0.380 (0.856) C:61% T:96%	pCi/L	04/13/21 11:58	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

QC Batch: 439778

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92527605001, 92527605002

METHOD BLANK: 2123479

Matrix: Water

Associated Lab Samples: 92527605001, 92527605002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0589 ± 0.0974 (0.215) C:102% T:NA	pCi/L	03/29/21 07:35	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92527605

QC Batch: 441741	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92527605017, 92527605018

METHOD BLANK: 2132377 Matrix: Water
Associated Lab Samples: 92527605017, 92527605018

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.289 ± 0.424 (0.915) C:67% T:92%	pCi/L	04/13/21 11:49	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

QC Batch: 441700

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92527605017, 92527605018

METHOD BLANK: 2132278

Matrix: Water

Associated Lab Samples: 92527605017, 92527605018

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.405 ± 0.438 (0.924) C:78% T:NA	pCi/L	04/09/21 09:15	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SEMIANNUAL RADS
Pace Project No.: 92527605

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92527605001	HGWA-111	EPA 9315	439778		
92527605002	HGWA-111 FILTERED	EPA 9315	439778		
92527605003	HGWA-47	EPA 9315	440500		
92527605004	HGWA-48D	EPA 9315	440500		
92527605005	HGWA-112	EPA 9315	440500		
92527605006	HGWA-113	EPA 9315	440499		
92527605007	HGWA-113 FILTERED	EPA 9315	440499		
92527605008	HGWC-101	EPA 9315	440499		
92527605009	HGWC-102	EPA 9315	440499		
92527605010	HGWC-109	EPA 9315	440499		
92527605011	DUP-4	EPA 9315	440499		
92527605012	HGWC-103	EPA 9315	440499		
92527605013	HGWC-105	EPA 9315	440499		
92527605014	HGWC-107	EPA 9315	440499		
92527605015	HGWC-118	EPA 9315	440500		
92527605016	HGWC-118 FILTERED	EPA 9315	440500		
92527605017	HGWC-117	EPA 9315	441700		
92527605018	FB-4	EPA 9315	441700		
92527605001	HGWA-111	EPA 9320	440491		
92527605002	HGWA-111 FILTERED	EPA 9320	440491		
92527605003	HGWA-47	EPA 9320	440493		
92527605004	HGWA-48D	EPA 9320	440493		
92527605005	HGWA-112	EPA 9320	440493		
92527605006	HGWA-113	EPA 9320	440491		
92527605007	HGWA-113 FILTERED	EPA 9320	440491		
92527605008	HGWC-101	EPA 9320	440491		
92527605009	HGWC-102	EPA 9320	440493		
92527605010	HGWC-109	EPA 9320	440493		
92527605011	DUP-4	EPA 9320	440493		
92527605012	HGWC-103	EPA 9320	440493		
92527605013	HGWC-105	EPA 9320	440493		
92527605014	HGWC-107	EPA 9320	440493		
92527605015	HGWC-118	EPA 9320	440493		
92527605016	HGWC-118 FILTERED	EPA 9320	440493		
92527605017	HGWC-117	EPA 9320	441741		
92527605018	FB-4	EPA 9320	441741		
92527605001	HGWA-111	Total Radium Calculation	443120		
92527605002	HGWA-111 FILTERED	Total Radium Calculation	443120		
92527605003	HGWA-47	Total Radium Calculation	443251		
92527605004	HGWA-48D	Total Radium Calculation	443251		
92527605005	HGWA-112	Total Radium Calculation	443251		
92527605006	HGWA-113	Total Radium Calculation	443291		
92527605007	HGWA-113 FILTERED	Total Radium Calculation	443291		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4 SEMIANNUAL RADS

Pace Project No.: 92527605

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92527605008	HGWC-101	Total Radium Calculation	443356		
92527605009	HGWC-102	Total Radium Calculation	443356		
92527605010	HGWC-109	Total Radium Calculation	443356		
92527605011	DUP-4	Total Radium Calculation	443356		
92527605012	HGWC-103	Total Radium Calculation	443356		
92527605013	HGWC-105	Total Radium Calculation	443356		
92527605014	HGWC-107	Total Radium Calculation	443356		
92527605015	HGWC-118	Total Radium Calculation	443356		
92527605016	HGWC-118 FILTERED	Total Radium Calculation	443356		

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
 Upon Receipt

Client Name:

G-A Power

Project #:

WO# : 92527605



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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *5/12/21*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? *CO*

Thermometer: Wet Blue None

Yes No N/A

Gun ID: 230 Type of Ice:

Cooler Temp: 1.8 Correction Factor: 0.0
 Add/Subtract (°C)

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.8

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		8.
-Includes Date/Time/ID/Analysis Matrix:	<i>W</i>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Company: GA Power Address: Atlanta, GA		Section B Required Project Information: Report to: SCS Contacts Copy To: Geosyntec Contacts		Section C Invoice Information: Attention: Southern Co. Company Name: Address: Price Quote Reference: Price Project Manager: Price Point # 10838-12	
Email To: SCS Contacts Phone: Fax: Requested Date DATED: 10 Day		Purchase Order No.: Project Name: Plant Hammond AP-4 Semiannual Project Number: GW6561		REGULATORY AGENCY: <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	
Requested Date DATED: 10 Day		Project Number: GW6561		Site Location: GA STATE:	

ITEM #	Section D Required Client Information: Valid Matrix Codes MATRIX CODE (see valid codes to lab) SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS		Preservatives		Analysis Test		Residual Chlorine (Y/N)	Pace Project No./ Lab ID.		
		DATE	TIME	DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃			Methanol	Other
1	HEAVY-METALS														
2	Dup-4	WT G	WT G												
3	FB-4	WT G	WT G												
4															
5															
6															
7															
8															
9															
10															
11															
12															

Additional Comments: *Business hours 3/18/12 15:31*

Relinquished By / Affiliation: *Ken Williams / Pace*

Accepted By / Affiliation: *Ken Williams / Pace*

Date: *3/18/12*

Date: *3/18/12*

Temp in °C: _____

Received on Ice (Y/N): _____

Custody Sealed Cooler (Y/N): _____

Samples Intact (Y/N): _____

Signature: *Ken Williams*

Signature: *Ken Williams*

Date Signed (MANDATORY): *3/18/12*

Date Signed (MANDATORY): *3/18/12*

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-226
 Analyst: CLA
 Date: 3/26/2021
 Worklist: 59452
 Matrix: DW

Method Blank Assessment	
MB Sample ID	2123479
MB Concentration:	0.059
MB Counting Uncertainty:	0.087
MB MDC:	0.215
MB Numerical Performance Indicator:	1.19
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD59452	LCSD59452
Count Date:	3/29/2021	3/29/2021
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.039	24.039
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.506	0.508
Target Conc. (pCi/L, g, F):	4.749	4.731
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	4.865	4.528
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.699	0.629
Numerical Performance Indicator:	0.32	-0.63
Percent Recovery:	102.45%	95.71%
Status vs Numerical Indicator:	N/A	N/A
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment	Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:	Sample I.D.:
Duplicate Sample I.D.:	Sample MS I.D.:
Sample Result (pCi/L, g, F):	Sample MSD I.D.:
Sample Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Result:
Sample Duplicate Result (pCi/L, g, F):	Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:
Are sample and/or duplicate results below RL?	Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):
Duplicate Numerical Performance Indicator:	Duplicate Numerical Performance Indicator:
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
Duplicate Status vs Numerical Indicator:	MS/MSD Duplicate Status vs Numerical Indicator:
Duplicate Status vs RPD:	MS/MSD Duplicate Status vs RPD:
% RPD Limit:	% RPD Limit:

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

Comments:

3/30/21

3/30/21

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-226
 Analyst: CLA
 Date: 3/26/2021
 Worklist: 59452
 Matrix: DW

Method Blank Assessment	
MB Sample ID	2123479
MB concentration:	0.059
M/B Counting Uncertainty:	0.097
MB MDC:	0.215
MB Numerical Performance Indicator:	1.19
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCS/D (Y or N)?	N
LCS59452	LCS59452
Count Date:	3/29/2021
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.039
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.506
Target Conc. (pCi/L, g, F):	4.749
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.865
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.699
Numerical Performance Indicator:	0.32
Percent Recovery:	102.45%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92527605002
Duplicate Sample I.D.:	92527605002DUP
Sample Result (pCi/L, g, F):	0.055
Sample Duplicate Result (pCi/L, g, F):	0.100
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.097
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.161
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	-0.428
Duplicate RPD:	54.54%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

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

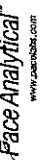
03/30/21

03/30/21

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): Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): Matrix Spike Duplicate Result: Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

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

Quality Control Sample Performance Assessment



Test: Ra-226
Analyst: CLA
Date: 4/8/2021
Worklist: 59702
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2132278
MB concentration:	0.405
MB Counting Uncertainty:	0.434
MB MDC:	0.924
MB Numerical Performance Indicator:	1.83
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

	LCS/D (Y or N)?	
	LCS59702	LCS59702
Count Date:	4/9/2021	4/9/2021
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.039	24.039
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.501	0.505
Target Conc. (pCi/L, g, F):	4.798	4.759
Uncertainty (Calculated):	0.058	0.057
Result (pCi/L, g, F):	5.290	4.898
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.865	0.840
Numerical Performance Indicator:	1.11	102.91%
Percent Recovery:	N/A	N/A
Status vs Numerical Indicator:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:</p> <p>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):</p> <p>Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:</p>		

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
<p>Sample I.D.:</p> <p>Duplicate Sample I.D.:</p> <p>Sample Result (pCi/L, g, F):</p> <p>Sample Duplicate Result (pCi/L, g, F):</p> <p>Sample Duplicate Counting Uncertainty (pCi/L, g, F):</p> <p>Are sample and/or duplicate results below RL?</p> <p>Duplicate Numerical Performance Indicator:</p> <p>(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:</p> <p>Duplicate Status vs Numerical Indicator:</p> <p>Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>	<p>LCS59702</p> <p>LCS59702</p> <p>5.290</p> <p>0.865</p> <p>4.898</p> <p>0.840</p> <p>NO</p> <p>0.636</p> <p>6.90%</p> <p>N/A</p> <p>Pass</p> <p>25%</p>

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
<p>Sample I.D.:</p> <p>Sample MS I.D.:</p> <p>Sample MSD I.D.:</p> <p>Matrix Spike Result Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):</p> <p>Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):</p> <p>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:</p>		

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

Comments:

Handwritten signature and date: 4/8/21

Handwritten date: 4/8/21

Quality Control Sample Performance Assessment



Test: Ra-226
Analyst: CLA
Date: 4/8/2021
Worklist: 59702
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2132278
MB concentration:	0.405
MIB Counting Uncertainty:	0.434
MB MDC:	0.924
MB Numerical Performance Indicator:	1.83
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCS/D (Y or N)?	N
LCS59702	LCS59702
Count Date:	4/9/2021
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.039
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.501
Target Conc. (pCi/L, g, F):	4.798
Uncertainty (Calculated):	0.058
Result (pCi/L, g, F):	5.290
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.865
Numerical Performance Indicator:	1.11
Percent Recovery:	110.27%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92527605017
Duplicate Sample I.D.:	92527605017DUP
Sample Result (pCi/L, g, F):	0.218
Sample Duplicate Result (pCi/L, g, F):	0.373
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.317
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.380
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	-0.365
Duplicate RPD:	37.04%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail**
% RPD Limit:	25%

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

Comments:

***Batch must be prepared and analyzed to meet the precision. N/A

Handwritten notes: *WAM 4/12/21* and *WAM 4/12/21*

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

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

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-228
Analyst: LAL
Date: 4/1/2021
Worklist: 59561
Matrix: DW

Method Blank Assessment	
MB Sample ID	2126663
MB Concentration:	0.102
M/B Counting Uncertainty:	0.172
MB MDC:	0.390
MB Numerical Performance Indicator:	1.16
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	Y
Count Date:	4/5/2021	LCS059561	4/5/2021
Spike I.D.:	19-033	LCS059561	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.039		24.039
Volume Used (mL):	0.10		0.10
Aliquot Volume (L, g, F):	0.515		0.502
Target Conc. (pCi/L, g, F):	4.664		4.765
Uncertainty (Calculated):	0.056		0.057
Result (pCi/L, g, F):	4.047		4.762
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.578		0.617
Numerical Performance Indicator:	-2.08		-0.07
Percent Recovery:	86.77%		99.51%
Status vs Numerical Indicator:	N/A		N/A
Upper % Recovery Limits:	Pass		Pass
Lower % Recovery Limits:	125%		125%
	75%		75%

Duplicate Sample Assessment		LCSD (Y or N)?	Y
Sample I.D.:	LCS059561		
Duplicate Sample I.D.:	LCS059561		
Sample Result (pCi/L, g, F):	4.047		
Sample Duplicate Result (pCi/L, g, F):	0.578		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.762		
Are sample and/or duplicate results below RL?	NO		
Duplicate Numerical Performance Indicator:	-1.655		
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	13.67%		
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Pass		
% RPD Limit:	25%		

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

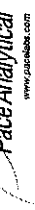
Comments:

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

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

4/5/21

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/5/2021
Worklist: 59560
Matrix: DW

Method Blank Assessment	
MB Sample ID	2126661
MB concentration:	0.090
M/B Counting Uncertainty:	0.196
MB MDC:	0.458
MB Numerical Performance Indicator:	0.90
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCS (Y or N)?	N
LCS 59560	LCS D59560
Count Date:	4/5/2021
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.039
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.504
Target Conc. (pCi/L, g, F):	4.771
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	5.065
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.277
Numerical Performance Indicator:	2.04
Percent Recovery:	106.17%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92527258011
Duplicate Sample I.D.:	92527258011DUP
Sample Result (pCi/L, g, F):	-0.015
Sample Result Counting Uncertainty (pCi/L, g, F):	0.075
Sample Duplicate Result (pCi/L, g, F):	0.050
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.058
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	-1.338
Duplicate RPD:	375.86%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

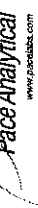
***Batch must be re-prepped due to unacceptable precision. N/A

100%
DW
LAL
4/5/21

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

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

Quality Control Sample Performance Assessment



Test: Ra-226
Analyst: LAL
Date: 4/5/2021
Worklist: 59560
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2128661
MB Concentration:	0.090
MB Counting Uncertainty:	0.196
MB MDC:	0.458
MB Numerical Performance Indicator:	0.90
MB Status vs. Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS#	Y or N?
		LCS59560	Y
		4/5/2021	
Count Date:	4/5/2021	LCS59560	Y
Spike I.D.:	19-033	4/5/2021	
Decay Corrected Spike Concentration (pCi/mL):	24.039	19-033	
Volume Used (mL):	0.10	24.039	
Aliquot Volume (L, g, F):	0.504	0.10	
Target Conc. (pCi/L, g, F):	4.771	0.518	
Uncertainty (Calculated):	0.057	4.641	
Result (pCi/L, g, F):	5.065	0.056	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.277	4.810	
Numerical Performance Indicator:	2.04	0.261	
Percent Recovery:	106.17%	1.24	
Status vs Numerical Indicator:	N/A	103.65%	
Status vs Recovery:	Pass	N/A	
Upper % Recovery Limits:	125%	Pass	
Lower % Recovery Limits:	75%	75%	

Duplicate Sample Assessment	
Sample I.D.:	LCS59560
Duplicate Sample I.D.:	LCS59560
Sample Result (pCi/L, g, F):	5.065
Sample Result Counting Uncertainty (pCi/L, g, F):	0.277
Sample Duplicate Result (pCi/L, g, F):	4.810
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.261
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	1.314
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	2.40%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

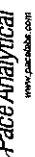
Sample Matrix Spike Control Assessment		MS/MSD 1	MS/MSD 2
Sample Collection Date:			
Sample I.D.:			
Sample MS I.D.:			
Sample MSD I.D.:			
Spike I.D.:			
MS/MSD Decay Corrected Spike Concentration (pCi/mL):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MSD Aliquot (L, g, F):			
MS Target Conc. (pCi/L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike Uncertainty (calculated):			
MSD Spike Uncertainty (calculated):			
Sample Result:			
Sample Result Counting Uncertainty (pCi/L, g, F):			
Sample Matrix Spike Result:			
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):			
Sample Matrix Spike Duplicate Result:			
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:	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
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:	

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/6/2021
Worklist: 59552
Matrix: WT

Method Blank Assessment	
MB Sample ID	2126646
MB concentration:	0.826
MB 2 Sigma CSU:	0.447
MB MDC:	0.791
MB Numerical Performance Indicator:	3.62
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS59552	Y
Count Date:	4/9/2021	LCS59552
Spike I.D.:	21-003	4/9/2021
Decay Corrected Spike Concentration (pCi/mL):	38.140	38.140
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.803	0.815
Target Conc. (pCi/L, g, F):	4.752	4.682
Uncertainty (Calculated):	0.233	0.229
Result (pCi/L, g, F):	4.576	4.583
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.088	1.068
Numerical Performance Indicator:	-0.31	-0.18
Percent Recovery:	96.30%	97.88%
Status vs Numerical Indicator:	Pass	N/A
Upper % Recovery Limits:	135%	Pass
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:	Sample I.D.:
Duplicate Sample I.D.:	Sample MS I.D.:
Sample Result (pCi/L, g, F):	Sample MSD I.D.:
Sample Result 2 Sigma CSU (pCi/L, g, F):	Sample Matrix Spike Result:
Sample Duplicate Result (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Are sample and/or duplicate results below RL?	Duplicate Numerical Performance Indicator:
Duplicate Numerical Performance Indicator:	Duplicate Numerical Performance Indicator:
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
Duplicate Status vs Numerical Indicator:	MS/MSD Duplicate Status vs Numerical Indicator:
Duplicate Status vs RPD:	MS/MSD Duplicate Status vs RPD:
% RPD Limit:	% 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.

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/16/2021
Worklist: 59554
Matrix: WT

Method Blank Assessment	
MB Sample ID	2126652
MB concentration:	0.217
M/B 2 Sigma CSU:	0.303
MB MDC:	0.649
MB Numerical Performance Indicator:	1.40
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSID (Y or N)?	y
LCS59554	4/12/2021
Count Date:	21-003
Spike I.D.:	38.103
Decay Corrected Spike Concentration (pCi/mL):	0.10
Volume Used (mL):	0.815
Aliquot Volume (L, g, F):	4.675
Target Conc. (pCi/L, g, F):	0.227
Uncertainty (Calculated):	4.143
Result (pCi/L, g, F):	0.989
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.84
Numerical Performance Indicator:	-0.94
Percent Recovery:	89.47%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	135%
Lower % Recovery Limits:	60%

Duplicate Sample Assessment	
Sample I.D.:	LCS59554
Duplicate Sample I.D.:	LCS59554
Sample Result (pCi/L, g, F):	5.932
Sample Duplicate Result (pCi/L, g, F):	1.319
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	4.143
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.989
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	2.127
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	34.59%
Duplicate Status vs Numerical Indicator:	Warning
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

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

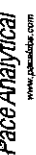
Comments:

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

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
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:	

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/13/2021
Worklist: 59742
Matrix: WT

Method Blank Assessment	
MB Sample ID	2132377
MB concentration:	0.289
MB 2 Sigma CSU:	0.424
MB MDC:	0.915
MB Numerical Performance Indicator:	1.33
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS59742	Y
Count Date:	4/13/2021	LCS59742
Spike I.D.:	21-003	4/13/2021
Decay Corrected Spike Concentration (pCi/mL):	38.091	21-003
Volume Used (mL):	0.10	38.091
Aliquot Volume (L, g, F):	0.814	0.10
Target Conc. (pCi/L, g, F):	4.681	0.814
Uncertainty (Calculated):	0.229	4.678
Result (pCi/L, g, F):	4.140	4.425
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.980	1.017
Numerical Performance Indicator:	-1.05	-0.48
Percent Recovery:	88.44%	94.58%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	LCS59742	Y
Sample I.D.:	LCS59742	4/13/2021
Duplicate Sample I.D.:	LCS59742	21-003
Sample Result (pCi/L, g, F):	4.140	38.091
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.980	0.10
Sample Duplicate Result (pCi/L, g, F):	4.425	0.814
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.017	4.678
Ave sample and/or duplicate results below RL?	NO	4.425
Duplicate Numerical Performance Indicator:	-0.396	4.425
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	6.72%	1.017
Duplicate Status vs Numerical Indicator:	Pass	NO
Duplicate Status vs RPD:	Pass	-0.396
% RPD Limit:	36%	6.72%

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

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
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:

4/13/2021

June 2021

June 28, 2021

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

RE: Project: HAMMOND AP-4
Pace Project No.: 92546094

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 24, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Asheville
- Pace Analytical Services - 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 Company
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-4

Pace Project No.: 92546094

Pace Analytical Services Charlotte

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

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

Pace Analytical Services Asheville

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

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

Pace Analytical Services Peachtree Corners

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-4

Pace Project No.: 92546094

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92546094001	HGWC-117	Water	06/23/21 12:36	06/24/21 08:20
92546094002	EB-1	Water	06/23/21 13:47	06/24/21 08:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-4

Pace Project No.: 92546094

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92546094001	HGWC-117	EPA 6010D	DRB	1
		EPA 6020B	CW1	2
		SM 2540C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92546094002	EB-1	EPA 6010D	DRB	1
		EPA 6020B	CW1	2
		SM 2540C-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

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-4

Pace Project No.: 92546094

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92546094001	HGWC-117					
	Performed by	CUSTOME			06/24/21 08:44	
		R				
	pH	5.72	Std. Units		06/24/21 08:44	
EPA 6010D	Calcium	56.5	mg/L	1.0	06/24/21 16:43	M1
EPA 6020B	Boron	1.0	mg/L	0.040	06/24/21 17:10	
EPA 6020B	Cobalt	0.016	mg/L	0.0050	06/24/21 17:10	
SM 2540C-2011	Total Dissolved Solids	325	mg/L	10.0	06/24/21 11:43	
EPA 300.0 Rev 2.1 1993	Chloride	8.8	mg/L	1.0	06/25/21 16:02	
EPA 300.0 Rev 2.1 1993	Sulfate	125	mg/L	3.0	06/26/21 01:41	
92546094002	EB-1					
	Performed by	CUSTOME			06/24/21 08:44	
		R				
	pH	6.03	Std. Units		06/24/21 08:44	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-4
Pace Project No.: 92546094

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: HGWC-117									
Lab ID: 92546094001									
Collected: 06/23/21 12:36 Received: 06/24/21 08:20 Matrix: Water									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		06/24/21 08:44		
pH	5.72	Std. Units			1		06/24/21 08:44		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	56.5	mg/L	1.0	0.13	1	06/24/21 11:59	06/24/21 16:43	7440-70-2	M1
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Boron	1.0	mg/L	0.040	0.0052	1	06/24/21 11:10	06/24/21 17:10	7440-42-8	
Cobalt	0.016	mg/L	0.0050	0.00038	1	06/24/21 11:10	06/24/21 17:10	7440-48-4	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	325	mg/L	10.0	10.0	1		06/24/21 11:43		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	8.8	mg/L	1.0	0.60	1		06/25/21 16:02	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		06/25/21 16:02	16984-48-8	M1
Sulfate	125	mg/L	3.0	1.5	3		06/26/21 01:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-4
Pace Project No.: 92546094

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: EB-1									
Lab ID: 92546094002									
Collected: 06/23/21 13:47 Received: 06/24/21 08:20 Matrix: Water									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		06/24/21 08:44		
pH	6.03	Std. Units			1		06/24/21 08:44		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	ND	mg/L	1.0	0.13	1	06/24/21 11:59	06/24/21 17:58	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Boron	ND	mg/L	0.040	0.0052	1	06/24/21 11:10	06/24/21 17:16	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.00038	1	06/24/21 11:10	06/24/21 17:16	7440-48-4	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		06/24/21 11:43		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	ND	mg/L	1.0	0.60	1		06/25/21 16:42	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		06/25/21 16:42	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		06/25/21 16:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4

Pace Project No.: 92546094

QC Batch: 629278	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D ATL
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92546094001, 92546094002

METHOD BLANK: 3307189 Matrix: Water

Associated Lab Samples: 92546094001, 92546094002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.13	06/24/21 16:34	

LABORATORY CONTROL SAMPLE: 3307190

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: 3307191 3307192

Parameter	Units	3307191		3307192		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	56.5	1	58.1	54.6	157	-187	75-125	6	20	M1

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4
Pace Project No.: 92546094

QC Batch: 629279 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92546094001, 92546094002

METHOD BLANK: 3307195 Matrix: Water
Associated Lab Samples: 92546094001, 92546094002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	0.0052	06/24/21 16:56	
Cobalt	mg/L	ND	0.0050	0.00038	06/24/21 16:56	

LABORATORY CONTROL SAMPLE: 3307196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.1	106	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3307197 3307198

Parameter	Units	92546063002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	ND	1	1	1.1	1.1	106	108	75-125	2	20	
Cobalt	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-4

Pace Project No.: 92546094

QC Batch: 629284	Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92546094001, 92546094002

METHOD BLANK: 3307237 Matrix: Water

Associated Lab Samples: 92546094001, 92546094002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/24/21 11:41	

LABORATORY CONTROL SAMPLE: 3307238

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	394	98	90-111	

SAMPLE DUPLICATE: 3307239

Parameter	Units	92545315001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	68.0	72.0	6	10	

SAMPLE DUPLICATE: 3307240

Parameter	Units	92545687002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1340	1380	3	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.

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QUALITY CONTROL DATA

Project: HAMMOND AP-4

Pace Project No.: 92546094

QC Batch: 629646

Analysis Method: EPA 300.0 Rev 2.1 1993

QC Batch Method: EPA 300.0 Rev 2.1 1993

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92546094001, 92546094002

METHOD BLANK: 3309082

Matrix: Water

Associated Lab Samples: 92546094001, 92546094002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/25/21 15:35	
Fluoride	mg/L	ND	0.10	0.050	06/25/21 15:35	
Sulfate	mg/L	ND	1.0	0.50	06/25/21 15:35	

LABORATORY CONTROL SAMPLE: 3309083

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.4	97	90-110	
Fluoride	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	50	48.1	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3309084 3309085

Parameter	Units	92546094001		3309084		3309085		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	8.8	50	50	58.3	59.5	99	101	90-110	2	10		
Fluoride	mg/L	ND	2.5	2.5	3.3	3.3	129	130	90-110	0	10	M1	
Sulfate	mg/L	125	50	50	171	170	92	90	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3309086 3309087

Parameter	Units	92545943002		3309086		3309087		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	25.6	50	50	75.1	75.7	99	100	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	102	102	90-110	0	10		
Sulfate	mg/L	ND	50	50	49.6	50.3	99	101	90-110	2	10		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-4

Pace Project No.: 92546094

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-4

Pace Project No.: 92546094

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92546094001	HGWC-117				
92546094002	EB-1				
92546094001	HGWC-117	EPA 3010A	629278	EPA 6010D	629378
92546094002	EB-1	EPA 3010A	629278	EPA 6010D	629378
92546094001	HGWC-117	EPA 3005A	629279	EPA 6020B	629454
92546094002	EB-1	EPA 3005A	629279	EPA 6020B	629454
92546094001	HGWC-117	SM 2540C-2011	629284		
92546094002	EB-1	SM 2540C-2011	629284		
92546094001	HGWC-117	EPA 300.0 Rev 2.1 1993	629646		
92546094002	EB-1	EPA 300.0 Rev 2.1 1993	629646		

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Document Name:
Sample Condition Upon Receipt(SCUR)

Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
Page 1 of 2

Issuing Authority:
Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
Upon Receipt

Client Name:

Project #:

WO# : 92546094



92546094

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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 10/24/21 VA

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?
 Yes No N/A

Thermometer: Wet Blue None
HR Gun ID: THR230 Type of Ice: _____

Cooler Temp: 4.0 Correction Factor: Add/Subtract (°C) -0.2

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 3.8

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4. <u>48 hr TAT</u>
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

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

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

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

Project # **W0# : 92546094**

PM: KLH1 Due Date: 06/28/21

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-)	WGFLU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

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

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



Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>.

CHAIN-OF-CUSTODY / Analytical Request Document

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

Client Information: Client Name: Georgia Power, Address: 1225 Roberts Blvd, NW, Atlanta, GA 30144, Phone: (678) 907-9590, Fax: (678) 907-9590, Email: TKessler@geoplync.com

Project Information: Project Name: Hammond AP-4, Project #: [blank]

Required Project Information: Report To: Thomas Kessler, Copy To: [blank]

Invoice Information: Attention: [blank], Company Name: [blank], Address: [blank], Pace Quote: [blank], Pace Project Manager: ketlin.herring@pacelabs.com, Pace Profile #: 10839-12, Regulatory Agency: GA

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Y/N	Residual Chlorine (Y/N)					
			START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other								
1	HGWC-117	WT	6/27/21	12:36	6/27/21	12:21	5								X	X	X	X	X		
2	EB-01	WT	6/27/21	13:42	6/27/21	13:47	5								X	X	X	X	X		
3		WT													X	X	X	X	X		
4		WT													X	X	X	X	X		
5															X	X	X	X	X		
6															X	X	X	X	X		
7															X	X	X	X	X		
8															X	X	X	X	X		
9															X	X	X	X	X		
10															X	X	X	X	X		
11															X	X	X	X	X		
12															X	X	X	X	X		

ADDITIONAL COMMENTS: 28 HR TAT, 5 bottles, 48

REQUISITIONED BY / AFFILIATION: Thomas Kessler

DATE: 6/27/21

TIME: 0820

ACCEPTED BY / AFFILIATION: [Signature]

DATE: 6/27/21

TIME: 0820

TEMP in C: [blank]

RECEIVED ON ICE: (Y/N)

CUSTODY SEALED: (Y/N)

COOLER: (Y/N)

SAMPLES INTACT: (Y/N)

PH = 5.72
PH = 6.03

PRINT NAME OF SAMPLER: Thomas Kessler

SIGNATURE OF SAMPLER: [Signature]

DATE SIGNED: 6/23/21

VALIDATION REPORTS

July 2020

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 Carolina, 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 (°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

August 2020

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 Carolina, for the following analytical test:

- Chloride, Fluoride and Sulfate by USEPA Method 300.0

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by USEPA Method 9315
- Radium-228 by USEPA Method 9320
- Total Radium by Calculation

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data 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 (°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

September 2020

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 (°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 ($RER(2\sigma) < 3$) 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

November 2020

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 (°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.

* * * * *

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

December 2020

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 (°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.

* * * * *

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

January 2021

Memorandum

Date: April 9, 2021
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 92517879 and 92517911**

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 19-20 January 2021, 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 Environmental Protection Agency (US 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, November 2020 (EPA 542-R-20-006); 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
92517879001	HGWA-47
92517879002	HGWA-48D
92517879003	EB-01

Laboratory ID	Client ID
92517911001	HGWA-47
92517911002	HGWA-48D
92517911003	EB-01

The samples were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

The year was not documented on the chain of custody (COC) for the collection dates associated with samples HGWA-47 and EB-01. The samples were logged in with the collection year of 2021.

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 596653, 596683, 596887 and 596939). 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 596887 at an estimated concentration greater than the MDL and less than the reporting limit (RL). Since antimony was not detected in the associated sample, no qualifications were applied to the data.

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 sample set specific MS/MSD pairs were reported using samples HGWA-47 and HGWA-48D. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

The calcium recoveries in the MS/MSD pair using sample HGWA-47 were low and outside of the laboratory specified acceptance criteria. Since the recovery of calcium in sample HGWA-47 was greater than four times the spiked concentration, no qualifications were applied to the data based on the MS/MSD recovery results.

Three batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). 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. No elevated non-detect results were 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 594784). 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

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 non-detect 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). Two method blanks were reported for TDS (batches 594633 and 594779) and two method blanks were reported for the anions (batches 594878 and 595172). 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). Four 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). Two 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.

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 non-detect 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 432561). Two method blanks were reported for the radium-226 data (batches 433326 and 433327). 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. 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, with the following exception.

The recovery of radium-228 in the LCS in batch 432561 was low and outside of the laboratory specified acceptance criteria. Therefore, the radium-228 and total radium concentrations less than the MDCs in the associated samples 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-47	Radium-228	0.176	U	0.176	UJ	5
HGWA-47	Combined Radium 226 + 228	0.176	U	0.176	UJ	5
HGWA-48D	Radium-228	1.03	U	1.03	UJ	5
HGWA-48D	Combined Radium 226 + 228	1.35	U	1.35	UJ	5
EB-01	Radium-228	0.365	U	0.365	UJ	5
EB-01	Combined Radium 226 + 228	0.404	U	0.404	UJ	5

pCi/L-picocuries per liter

U-not detected at or above the MDC

* 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

4.6 Laboratory Duplicate

One batch laboratory duplicate was reported for radium-228. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory specified acceptance criteria.

4.8 Equipment Blank

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 non-detect 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.

* * * * *

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

March 2021

Memorandum

Date: April 28, 2021
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 92527605 and 92527612**

SITE: Plant Hammond AP-4

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of thirteen aqueous samples, three field filtered samples, one field duplicate and one field blank, collected 11-19 March 2021, 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 Environmental Protection Agency (US EPA) Methods 3010A/6010D
- Metals by USEPA Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services 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, November 2020 (EPA 542-R-20-006); 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
92527605001	HGWA-111
92527605002	HGWA-111 FILTERED
92527605003	HGWA-47
92527605004	HGWA-48D
92527605005	HGWA-112
92527605006	HGWA-113
92527605007	HGWA-113 FILTERED
92527605008	HGWC-101
92527605009	HGWC-102
92527605010	HGWC-109
92527605011	DUP-4
92527605012	HGWC-103
92527605013	HGWC-105
92527605014	HGWC-107
92527605015	HGWC-118
92527605016	HGWC-118 FILTERED
92527612001	HGWA-111

Laboratory ID	Client ID
92527612002	HGWA-111 FILTERED
92527612003	HGWA-47
92527612004	HGWA-48D
92527612005	HGWA-112
92527612006	HGWA-113
92527612007	HGWA-113 FILTERED
92527612008	HGWC-101
92527612009	HGWC-102
92527612010	HGWC-109
92527612011	DUP-4
92527612012	HGWC-103
92527612013	HGWC-105
92527612014	HGWC-107
92527612015	HGWC-118
92527612016	HGWC-118 FILTERED
92527612017	HGWC-117
92527612018	FB-4

The samples were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

The following issues were noted on the chain of custody (COC). No qualifications were applied based on these issues.

- The collection times were not documented on the COC for the field duplicate and field blank, DUP-4 and FB-4, respectively. The field duplicate and field blank were logged in with the collection time of 00:00.
- There were time discrepancies for sample transfers on page 2 of the COC. The first relinquished by time was documented as 3/15/21 1145 and the received by time was documented as 3/15/21 1200. The second relinquished by time was documented as 3/15/21 1558 and the received by time was documented as 3/15/21 1458.
- The received by signature, date and time were missing for the final sample transfers on page 7 of the COC.
- Incorrect error corrections were observed on the COC, instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.

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.

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 610583 and 610584). 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 sample set specific MS/MSD pairs were reported, both using sample HGWA-111. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria.

For sample concentrations greater than four times the spiked concentration the MS/MSD recovery results were not considered for validation and no qualifications were applied to the data based on the MS/MSD recovery results.

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-4. Metals were not detected in the field blank above the MDLs, with the following exception.

Chromium was detected in FB-4 at an estimated concentration greater than the MDL and less than the RL. Therefore, the estimated chromium concentrations in the associated samples were U qualified as not detected at the RL.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
HGWA-111	Chromium	0.0020	J	0.0050	U	3
HGWA-111 FILTERED	Chromium	0.0011	J	0.0050	U	3
HGWA-48D	Chromium	0.00062	J	0.0050	U	3
HGWA-112	Chromium	0.0045	J	0.0050	U	3
HGWA-113 FILTERED	Chromium	0.0025	J	0.0050	U	3
HGWC-101	Chromium	0.00075	J	0.0050	U	3
HGWC-103	Chromium	0.0030	J	0.0050	U	3
HGWC-105	Chromium	0.00058	J	0.0050	U	3
HGWC-118	Chromium	0.0021	J	0.0050	U	3
HGWC-117	Chromium	0.0010	J	0.0050	U	3

mg/L-milligrams per liter

J-estimated concentration greater than the MDL and less than the RL

* Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

1.8 Field Duplicate

One field duplicate sample was collected with the sample set, DUP-4. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample, HGWC-102, with the following exception.

Chromium was not detected in HGWC-102 and was detected in DUP-4 at a concentration greater than the RL, resulting in a noncalculable RPD. Therefore, based on professional and technical judgment the non-detect chromium result in HGWC-102 was J qualified as estimated and the chromium concentration in DUP-4 was J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWC-102	Chromium	0.00055	U	NC	0.00055	UJ	7
DUP-4	Chromium	0.10	NA		0.10	J	7

mg/L-milligrams per liter

U-not detected at or above the MDL

NA-not applicable

NC-not calculable

1.9 Sensitivity

The samples were reported to the MDLs. No elevated non-detect results were 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 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

2.1 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%.

2.2 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.

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). Six method blanks were reported for TDS (batches 607316, 608067, 608136, 608443, 608913 and 609221) and six method blanks were reported for the anions (batches 607751, 607758, 607984, 608285, 608857 and 608960). The wet chemistry parameters were not detected in the method blanks above the MDLs.

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). Four sample set specific MS/MSD pairs were reported for the anions using samples HGWA-113, HGWC-109, HGWC-118 and HGWC-117. The recovery and RPD results were within the laboratory specified acceptance criteria, with the following exceptions.

The sulfate recoveries in the MS/MSD pair using sample HGWC-118 were low and outside the laboratory specified acceptance criteria. Therefore, the sulfate concentration in sample HGWC-118 was J- qualified as estimated with low bias.

Batch MS/MSD pairs were also reported for the anions. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWC-118	Sulfate	87.8	M1	87.8	J-	4

mg/L-milligrams per liter

M1-laboratory flag indicating the MS recovery exceeded the QC limits

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each analysis and batch. The recovery results were within the laboratory specified acceptance criteria.

2.6 Laboratory Duplicate

Four sample set specific laboratory duplicates were reported using samples HGWA-113, HGWC-101, HGWC-107 and HGWC-117. The RPD results were within the laboratory specified acceptance criteria, with the following exception.

The RPD of TDS in the laboratory duplicate using sample HGWC-107 was high and outside the laboratory specified acceptance criteria. Therefore, the TDS concentration in sample HGWC-107 was J qualified as estimated.

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.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWC-107	TDS	255	D6	255	J	12

mg/L-milligrams per liter

D6-laboratory flag indicating the precision between the sample and sample duplicate exceeded the laboratory control limits

2.7 Equipment Blank

Equipment blanks were not collected with the sample set.

2.8 Field Blank

One field blank was collected with the sample set, FB-4. The wet chemistry parameters were not detected in the field blank above the MDL.

2.9 Field Duplicate

One field duplicate sample was collected with the sample set, DUP-4. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample, HGWC-102.

2.10 Sensitivity

The samples were reported to the MDLs. No elevated non-detect results were reported.

2.11 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

3.0 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

3.1 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%.

3.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported for the radium-228 data (batches 440499, 439778, 441700 and 440500). Three method blanks were reported for the radium-226 data (batches 440493, 441741 and 440491). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

Radium-228 was detected in the method blank in batch 440491 (0.826 pCi/L) at a concentration greater than the MDC. Since radium-228 was not detected at concentrations greater than the MDCs in the associated samples, no qualifications were applied to the data.

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four 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) [1 sigma (1σ)] results were within the laboratory specified acceptance criteria.

3.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported using samples HGWA-111 FILTERED and HGWC-117. The RER (1σ) results were within the laboratory specified acceptance criteria.

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.

3.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory specified acceptance criteria.

3.8 Equipment Blank

Equipment blanks were not collected with the sample set.

3.9 Field Blank

One field blank was collected with the sample set, FB-4. Radium-226 and Radium-228 were not detected in the field blank above the MDCs.

3.10 Field Duplicate

One field duplicate sample was collected with the sample set, DUP-4. Acceptable precision (RER (1σ) < 3) was demonstrated between the field duplicate and the original sample, HGWC-102.

3.11 Sensitivity

The samples were reported to the MDCs. No elevated non-detect results were reported.

3.12 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

* * * * *

**ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team**

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.

- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.

- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.

- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
 Assigned by Geosyntec’s Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS 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

June 2021

Memorandum

Date: July 15, 2021
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validation - Level II Data Deliverable – Pace Analytical Services, LLC Project Number 92546094**

SITE: Plant Hammond AP-4

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of one aqueous sample and one equipment blank, collected 23 June 2021, 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 Environmental Protection Agency (US EPA) Methods 3010A/6010D
- Boron and Cobalt by USEPA Methods 3005A/6020B
- 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

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 report, professional and technical judgment, and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011); and

- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, November 2020 (EPA 542-R-20-006).

The following samples were analyzed and reported in the laboratory report:

Laboratory ID	Client ID
92546094001	HGWC-117

Laboratory ID	Client ID
92546094002	EB-1

The samples were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

Incorrect error corrections were observed on the chain of custody (COC), instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.

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.

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
- ✓ 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 the samples submitted for these analyses, 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 629278 and 629279). 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 for calcium, using sample HGWC-117. The relative percent difference (RPD) result was within the laboratory specified acceptance criteria.

The MS recovery was high, and the MSD recovery was low for calcium, both outside the laboratory specified acceptance criteria. Since the calcium concentration in HGWC-117 was greater than four times the spiked concentration, the MS/MSD recovery results were not considered for validation and no qualifications were applied to the data.

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

One equipment blank was collected with the sample set, EB-1. Metals were not detected in the equipment blank above the MDLs.

1.7 Sensitivity

The samples were reported to the MDLs. No elevated non-detect results were reported.

1.8 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 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
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

2.1 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%.

2.2 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.

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 for TDS (batch 629284) and one method blank was reported for the anions (batch 629646). The wet chemistry parameters were not detected in the method blanks above the MDLs.

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 for the anions, using sample HGWC-117. The recovery and RPD results were within the laboratory specified acceptance criteria, with the following exceptions.

The fluoride recoveries in the MS/MSD pair were high and outside the laboratory specified acceptance criteria. Since fluoride was not detected in sample HGWC-117, no qualifications were applied to the data.

One batch MS/MSD pair was also reported for the anions. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each analysis and batch. The recovery results were within the laboratory specified acceptance criteria.

2.6 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.

2.7 Equipment Blank

One equipment blank was collected with the sample set, EB-1. The wet chemistry parameters were not detected in the equipment blank above the MDLs.

2.8 Sensitivity

The samples were reported to the MDLs. No elevated non-detect results were reported.

2.9 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
NV	Not Validated

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample duplicate

RPD - Relative percent difference

FIELD SAMPLING REPORTS

July 2020

Product Name: Low-Flow System

Date: 2020-07-21 15:17:09

Project Information:

Operator Name Chad Russo
Company Name
Project Name Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 613229
Turbidity Make/Model

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter in
Tubing Length 33 ft

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-102
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.18 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:52:34	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

August 2020

Product Name: Low-Flow System

Date: 2020-08-25 10:04:32

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 39.0 ft

Pump placement from TOC 38.67 ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth 43.20 ft
Screen Length 10 ft
Depth to Water 12.60 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.65907 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:41:45	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:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 36.15 ft

Pump placement from TOC 35.15 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 39.22 ft
Screen Length 10 ft
Depth to Water 12.50 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.64635 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 32.53 ft

Pump placement from TOC 31.53 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth 36.53 ft
Screen Length 10 ft
Depth to Water 11.61 ft

Pumping Information:

Final Pumping Rate 125 mL/min
Total System Volume 0.63020 L
Calculated Sample Rate 300 sec 3.
Stabilization Drawdown 6 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

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 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 29 ft

Pump placement from TOC 28 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth 37.98 ft
Screen Length 10 ft
Depth to Water 13.10 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.61444 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

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 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 33 ft

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-102
Well diameter 2 in
Well Total Depth 37.02 ft
Screen Length 10 ft
Depth to Water 12.95 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.23729 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:14:27	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:

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 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 28 ft

Pump placement from TOC 27 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth 36.86 ft
Screen Length 10 ft
Depth to Water 14.65 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.60998 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 24 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:47:50	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:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 41 ft

Pump placement from TOC 40 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth 44.88 ft
Screen Length 10 ft
Depth to Water 17.72 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6680003 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

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 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 29 ft

Pump placement from TOC 28 ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth 38.08 ft
Screen Length 10 ft
Depth to Water 14.95 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.61444 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 27 ft

Pump placement from TOC 26 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth 31.00 ft
Screen Length 10 ft
Depth to Water 8.52 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6055124 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:17:35	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:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 36 ft

Pump placement from TOC 35 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth 39.90 ft
Screen Length 10 ft
Depth to Water 16.63 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 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 37 ft

Pump placement from TOC 36 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth 40.80 ft
Screen Length 10 ft
Depth to Water 13.18 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6501467 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 37 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:11:10	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

September 2020

Product Name: Low-Flow System

Date: 2020-09-18 11:43:10

Project Information:

Operator Name Vashish Taukooor
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 39 ft

Pump placement from TOC 38 ft

Well Information:

Well ID HGWA-47
Well diameter 2 in
Well Total Depth 43.45 ft
Screen Length 10 ft
Depth to Water 7.3 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2640735 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 70 ft

Pump placement from TOC 69 ft

Well Information:

Well ID HGWA-48D
Well diameter 2 in
Well Total Depth 72.92 ft
Screen Length 10 ft
Depth to Water 8.64 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.7974396 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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 μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:19:19	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:

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 42 ft

Pump placement from TOC 35 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 39.90 ft
Screen Length 10 ft
Depth to Water 13.40 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.6724638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:13:21	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:

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 40 ft

Pump placement from TOC 31 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.51 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6635369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

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 38 ft

Pump placement from TOC 31 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.80 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.6546101 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:46:52	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:

Operator Name Vashish Taukooor
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 34 ft

Pump placement from TOC 31 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth 36.20ft
Screen Length 10 ft
Depth to Water 12.89 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6367564 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

Operator Name Vashish Taukooor
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35 ft

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth 37.95 ft
Screen Length 10 ft
Depth to Water 13.76 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.6412198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 34 ft

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-102
Well diameter 2 in
Well Total Depth 36.84 ft
Screen Length 10 ft
Depth to Water 13.78 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2417564 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:26:25	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:

Operator Name Vashish Taukooor
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35 ft

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth 37.80 ft
Screen Length 10 ft
Depth to Water 14.13 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.6412198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

Operator Name Vashish Taukooor
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 41 ft

Pump placement from TOC 39 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth 44.58 ft
Screen Length 10 ft
Depth to Water 17.54 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.6680003 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

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 40 ft

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth 38.07 ft
Screen Length 10 ft
Depth to Water 15.80 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.6635369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 8.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

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 27 ft

Pump placement from TOC 26 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth 31.00 ft
Screen Length 10 ft
Depth to Water 8.93 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6055119 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	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:

Operator Name Vashish Taukoor
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 512733
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 37 ft

Pump placement from TOC 35.26 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth 39.95 ft
Screen Length 10 ft
Depth to Water 17.20 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6501467 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	18:00:07	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:

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 40 ft

Pump placement from TOC 35 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth 46.85 ft
Screen Length 10 ft
Depth to Water 13.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6635369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 37 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:31:20	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

November 2020

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
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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 Sample

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
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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

December 2020

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
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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
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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

January 2021

Low-Flow Test Report:

Test Date / Time: 1/19/2021 12:09:45 PM

Project: GP-Plant Hammond

Operator Name: Chad Russo

Location Name: HGWA-47 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 34 ft Initial Depth to Water: 7.52 ft	Pump Type: Alexis Tubing Type: polyethylene Tubing Inner Diameter: 0.17 in Estimated Total Volume Pumped: 5763.333 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: 728634
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 0.2	+/- 5	+/- 10	+/- 5	
1/19/2021 12:09 PM	00:00	7.38 pH	14.05 °C	410.41 µS/cm	1.29 mg/L		-34.5 mV	7.52 ft	200.00 ml/min
1/19/2021 12:13 PM	03:49	7.31 pH	15.56 °C	395.83 µS/cm	0.40 mg/L	9.14 NTU	-89.5 mV	7.54 ft	200.00 ml/min
1/19/2021 12:18 PM	08:49	7.31 pH	15.97 °C	387.23 µS/cm	0.27 mg/L	5.92 NTU	-46.1 mV	7.54 ft	200.00 ml/min
1/19/2021 12:23 PM	13:49	7.31 pH	15.95 °C	392.30 µS/cm	0.21 mg/L	3.76 NTU	-36.1 mV	7.54 ft	200.00 ml/min
1/19/2021 12:28 PM	18:49	7.32 pH	16.10 °C	393.24 µS/cm	0.18 mg/L	2.57 NTU	-67.9 mV	7.54 ft	200.00 ml/min
1/19/2021 12:33 PM	23:49	7.32 pH	16.10 °C	392.43 µS/cm	0.16 mg/L	2.19 NTU	-26.5 mV	7.54 ft	200.00 ml/min
1/19/2021 12:38 PM	28:49	7.32 pH	16.04 °C	392.31 µS/cm	0.16 mg/L	2.05 NTU	-58.0 mV	7.54 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-47	Grab

Low-Flow Test Report:

Test Date / Time: 1/19/2021 12:02:50 PM

Project: GP-Plant Hammond (3)

Operator Name: Connor Cain

Location Name: HGWA-48D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 63 ft Initial Depth to Water: 7.28 ft	Pump Type: QED Tubing Type: polyethylene Tubing Inner Diameter: 0.17 in Estimated Total Volume Pumped: 9000 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728638
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 0.2	+/- 5	+/- 10	+/- 5	
1/19/2021 12:02 PM	00:00	7.28 pH	15.98 °C	0.42 µS/cm	0.57 mg/L		-113.2 mV	221.89 ft	200.00 ml/min
1/19/2021 12:07 PM	05:00	7.30 pH	16.34 °C	0.41 µS/cm	0.29 mg/L		-188.3 mV	221.89 ft	200.00 ml/min
1/19/2021 12:12 PM	10:00	7.31 pH	16.47 °C	0.41 µS/cm	0.24 mg/L		-117.4 mV	221.89 ft	200.00 ml/min
1/19/2021 12:17 PM	15:00	7.33 pH	16.66 °C	0.41 µS/cm	0.22 mg/L		-198.4 mV	221.89 ft	200.00 ml/min
1/19/2021 12:22 PM	20:00	7.34 pH	16.73 °C	0.41 µS/cm	0.18 mg/L		-126.8 mV	221.89 ft	200.00 ml/min
1/19/2021 12:27 PM	25:00	7.36 pH	16.79 °C	0.41 µS/cm	0.16 mg/L		-214.0 mV	221.89 ft	200.00 ml/min
1/19/2021 12:32 PM	30:00	7.37 pH	16.82 °C	0.41 µS/cm	0.15 mg/L		-130.3 mV	221.89 ft	200.00 ml/min
1/19/2021 12:37 PM	35:00	7.38 pH	16.71 °C	0.40 µS/cm	0.13 mg/L		-122.0 mV	221.89 ft	200.00 ml/min
1/19/2021 12:42 PM	40:00	7.39 pH	16.72 °C	0.40 µS/cm	0.12 mg/L		-120.1 mV	221.89 ft	200.00 ml/min
1/19/2021 12:47 PM	45:00	7.40 pH	16.69 °C	0.40 µS/cm	0.11 mg/L		-197.7 mV	221.89 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-48D	Grab

March 2021

Low-Flow Test Report:

Test Date / Time: 3/12/2021 2:24:24 PM

Project: GP-Plant Hammond

Operator Name: Chad Russo

Location Name: HGWA-47 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 33.74 ft Total Depth: 43.74 ft Initial Depth to Water: 6.91 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump intake from TOC: 39 ft Estimated Total Volume Pumped: 6.536667 Liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 2.36 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Five Bottles: Metals, TDS, Inorganics, Radium

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	
3/12/2021 2:24 PM	00:00	7.31 pH	22.55 °C	340.56 µS/cm	4.08 mg/L		71.5 mV	6.91 ft	200.00 ml/min
3/12/2021 2:29 PM	05:00	7.46 pH	19.86 °C	378.44 µS/cm	0.90 mg/L	1.38 NTU	-18.1 mV	6.91 ft	200.00 ml/min
3/12/2021 2:34 PM	10:00	7.50 pH	19.68 °C	381.57 µS/cm	0.52 mg/L	0.99 NTU	-24.7 mV	6.91 ft	200.00 ml/min
3/12/2021 2:39 PM	15:00	7.49 pH	19.73 °C	384.00 µS/cm	0.24 mg/L	0.84 NTU	-18.4 mV	6.91 ft	200.00 ml/min
3/12/2021 2:44 PM	20:00	7.50 pH	19.68 °C	383.40 µS/cm	0.18 mg/L	0.96 NTU	1.4 mV	6.91 ft	200.00 ml/min
3/12/2021 2:47 PM	22:41	7.50 pH	19.73 °C	383.88 µS/cm	0.19 mg/L	0.99 NTU	4.6 mV	6.91 ft	200.00 ml/min
3/12/2021 2:52 PM	27:41	7.50 pH	19.73 °C	381.38 µS/cm	0.15 mg/L	0.72 NTU	8.9 mV	6.91 ft	200.00 ml/min
3/12/2021 2:57 PM	32:41	7.52 pH	19.77 °C	382.32 µS/cm	0.13 mg/L	1.21 NTU	3.5 mV	6.91 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-47	Grab Sample.

Low-Flow Test Report:

Test Date / Time: 3/12/2021 12:02:05 PM

Project: GP-Plant Hammond

Operator Name: Thomas Kessler

Location Name: HGWA-48D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 62.97 ft Total Depth: 72.97 Initial Depth to Water: 6.82 ft	Pump Type: Bladder Tubing Type: polyethylene Pump Intake From TOC: 67.97 ft Estimated Total Volume Pumped: 3.5 Liter Flow Cell Volume: 90 ml Final Flow Rate: 100 ml/min Final Draw Down: 1.48 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728566
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Test Notes:

Five bottles: Metals, TDS, Inorganics, Radium.

Weather Conditions:

Rainy; 70 degrees.

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	
3/12/2021 12:02 PM	00:00	7.58 pH	20.35 °C	398.47 µS/cm	2.45 mg/L	9.40 NTU	-99.8 mV	6.82 ft	200.00 ml/min
3/12/2021 12:07 PM	05:00	7.51 pH	17.77 °C	406.60 µS/cm	1.20 mg/L	16.50 NTU	-117.6 mV	8.15 ft	200.00 ml/min
3/12/2021 12:12 PM	10:00	7.51 pH	18.03 °C	404.88 µS/cm	1.28 mg/L	14.10 NTU	-125.0 mV	8.35 ft	200.00 ml/min
3/12/2021 12:17 PM	15:00	7.52 pH	17.88 °C	402.96 µS/cm	1.47 mg/L	11.63 NTU	-127.4 mV	8.31 ft	200.00 ml/min
3/12/2021 12:22 PM	20:00	7.49 pH	18.13 °C	402.59 µS/cm	1.49 mg/L	6.00 NTU	-125.2 mV	8.30 ft	200.00 ml/min
3/12/2021 12:27 PM	25:00	7.51 pH	18.33 °C	401.23 µS/cm	1.49 mg/L	4.94 NTU	-125.8 mV	8.30 ft	200.00 ml/min
3/12/2021 12:32 PM	30:00	7.51 pH	18.44 °C	398.78 µS/cm	1.48 mg/L	4.64 NTU	-124.7 mV	8.30 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-48D	Grab Sample.

Low-Flow Test Report:

Test Date / Time: 3/11/2021 1:20:37 PM

Project: GP-Plant Hammond

Operator Name: Chad Russo

Location Name: HGWA-111 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 33.67 ft Total Depth: 43.67 ft Initial Depth to Water: 11.31 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 39 ft Estimated Total Volume Pumped: 36 Liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 1.21 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Five Bottles: Metals, TDS, Inorganics, Radium

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	
3/11/2021 1:20 PM	00:00	7.25 pH	22.36 °C	128.30 µS/cm	4.89 mg/L		52.6 mV	11.31 ft	200.00 ml/min
3/11/2021 1:25 PM	05:00	6.39 pH	19.68 °C	133.70 µS/cm	4.97 mg/L	1.54 NTU	64.4 mV	12.15 ft	200.00 ml/min
3/11/2021 1:30 PM	10:00	6.58 pH	19.54 °C	218.30 µS/cm	4.41 mg/L	1.80 NTU	69.9 mV	12.15 ft	200.00 ml/min
3/11/2021 1:35 PM	15:00	6.72 pH	19.46 °C	242.68 µS/cm	4.20 mg/L	2.78 NTU	52.7 mV	12.20 ft	200.00 ml/min
3/11/2021 1:40 PM	20:00	6.80 pH	19.33 °C	258.90 µS/cm	4.08 mg/L	8.00 NTU	50.9 mV	12.25 ft	200.00 ml/min
3/11/2021 1:45 PM	25:00	6.86 pH	19.25 °C	270.24 µS/cm	3.97 mg/L	22.10 NTU	63.1 mV	12.28 ft	200.00 ml/min
3/11/2021 1:50 PM	30:00	6.91 pH	19.03 °C	279.90 µS/cm	3.90 mg/L	30.00 NTU	49.8 mV	12.33 ft	200.00 ml/min
3/11/2021 1:55 PM	35:00	6.93 pH	19.08 °C	287.49 µS/cm	3.86 mg/L	27.90 NTU	62.5 mV	12.35 ft	200.00 ml/min
3/11/2021 2:00 PM	40:00	6.98 pH	19.38 °C	293.51 µS/cm	3.79 mg/L	27.80 NTU	49.2 mV	12.37 ft	200.00 ml/min
3/11/2021 2:05 PM	45:00	7.02 pH	19.60 °C	301.71 µS/cm	3.73 mg/L	31.00 NTU	60.2 mV	12.37 ft	200.00 ml/min
3/11/2021 2:10 PM	50:00	7.06 pH	19.60 °C	306.80 µS/cm	3.70 mg/L	29.50 NTU	48.2 mV	12.37 ft	200.00 ml/min
3/11/2021 2:15 PM	55:00	7.05 pH	19.55 °C	305.50 µS/cm	3.71 mg/L	27.40 NTU	61.0 mV	12.37 ft	200.00 ml/min
3/11/2021 2:20 PM	01:00:00	7.08 pH	19.64 °C	309.86 µS/cm	3.66 mg/L	24.30 NTU	48.6 mV	12.37 ft	200.00 ml/min
3/11/2021 2:25 PM	01:05:00	7.09 pH	19.55 °C	311.80 µS/cm	3.67 mg/L	22.50 NTU	60.3 mV	12.37 ft	200.00 ml/min
3/11/2021 2:30 PM	01:10:00	7.11 pH	19.59 °C	313.23 µS/cm	3.65 mg/L	21.90 NTU	60.7 mV	12.42 ft	200.00 ml/min

3/11/2021 2:35 PM	01:15:00	7.08 pH	19.68 °C	312.80 µS/cm	3.64 mg/L	23.90 NTU	62.4 mV	12.42 ft	200.00 ml/min
3/11/2021 2:40 PM	01:20:00	7.11 pH	19.60 °C	315.22 µS/cm	3.62 mg/L	24.40 NTU	61.8 mV	12.42 ft	200.00 ml/min
3/11/2021 2:45 PM	01:25:00	7.12 pH	19.48 °C	314.80 µS/cm	3.64 mg/L	23.60 NTU	49.2 mV	12.42 ft	200.00 ml/min
3/11/2021 2:50 PM	01:30:00	7.13 pH	19.36 °C	316.97 µS/cm	3.63 mg/L	23.20 NTU	48.5 mV	12.47 ft	200.00 ml/min
3/11/2021 2:55 PM	01:35:00	7.12 pH	19.24 °C	318.27 µS/cm	3.62 mg/L	22.40 NTU	49.1 mV	12.47 ft	200.00 ml/min
3/11/2021 3:00 PM	01:40:00	7.13 pH	19.20 °C	319.93 µS/cm	3.61 mg/L	20.90 NTU	60.4 mV	12.47 ft	200.00 ml/min
3/11/2021 3:05 PM	01:45:00	7.15 pH	19.28 °C	320.11 µS/cm	3.59 mg/L	20.60 NTU	48.3 mV	12.47 ft	200.00 ml/min
3/11/2021 3:10 PM	01:50:00	7.16 pH	19.53 °C	321.16 µS/cm	3.56 mg/L	22.10 NTU	47.6 mV	12.47 ft	200.00 ml/min
3/11/2021 3:15 PM	01:55:00	7.16 pH	19.46 °C	322.76 µS/cm	3.53 mg/L	19.70 NTU	59.2 mV	12.47 ft	200.00 ml/min
3/11/2021 3:20 PM	02:00:00	7.15 pH	19.55 °C	321.57 µS/cm	3.52 mg/L	19.60 NTU	48.5 mV	12.47 ft	200.00 ml/min
3/11/2021 3:25 PM	02:05:00	7.18 pH	19.59 °C	323.04 µS/cm	3.49 mg/L	19.10 NTU	47.9 mV	12.47 ft	200.00 ml/min
3/11/2021 3:30 PM	02:10:00	7.17 pH	19.62 °C	323.72 µS/cm	3.50 mg/L	18.50 NTU	47.8 mV	12.47 ft	200.00 ml/min
3/11/2021 3:35 PM	02:15:00	7.17 pH	19.61 °C	324.03 µS/cm	3.49 mg/L	21.90 NTU	47.9 mV	12.47 ft	200.00 ml/min
3/11/2021 3:40 PM	02:20:00	7.17 pH	19.68 °C	324.99 µS/cm	3.47 mg/L	21.50 NTU	48.3 mV	12.52 ft	200.00 ml/min
3/11/2021 3:45 PM	02:25:00	7.17 pH	19.74 °C	323.96 µS/cm	3.45 mg/L	20.50 NTU	60.2 mV	12.52 ft	200.00 ml/min
3/11/2021 3:50 PM	02:30:00	7.18 pH	19.55 °C	324.84 µS/cm	3.46 mg/L	20.40 NTU	48.7 mV	12.52 ft	200.00 ml/min
3/11/2021 3:55 PM	02:35:00	7.19 pH	19.62 °C	327.37 µS/cm	3.43 mg/L	22.00 NTU	60.1 mV	12.52 ft	200.00 ml/min
3/11/2021 4:00 PM	02:40:00	7.17 pH	19.55 °C	326.46 µS/cm	3.44 mg/L	21.00 NTU	49.6 mV	12.52 ft	200.00 ml/min
3/11/2021 4:05 PM	02:45:00	7.18 pH	19.64 °C	326.30 µS/cm	3.42 mg/L	21.30 NTU	60.9 mV	12.52 ft	200.00 ml/min
3/11/2021 4:10 PM	02:50:00	7.19 pH	19.51 °C	328.14 µS/cm	3.41 mg/L	24.00 NTU	48.9 mV	12.52 ft	200.00 ml/min
3/11/2021 4:15 PM	02:55:00	7.21 pH	19.52 °C	330.97 µS/cm	3.38 mg/L	25.20 NTU	48.2 mV	12.52 ft	200.00 ml/min
3/11/2021 4:20 PM	03:00:00	7.20 pH	19.50 °C	330.20 µS/cm	3.38 mg/L	26.00 NTU	48.8 mV	12.52 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-111	Grab Sample.
HGWA-111 Filtered	Filtered Sample.

Low-Flow Test Report:

Test Date / Time: 3/12/2021 11:33:14 AM

Project: GP-Plant Hammond

Operator Name: Chad Russo

Location Name: HGWA-112 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 30.15 ft Total Depth: 40.15 ft Initial Depth to Water: 10.05 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 35 ft Estimated Total Volume Pumped: 22.38 Liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 1.55 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Five Bottles: Metals, TDS, Inorganics, Radium

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	
3/12/2021 11:33 AM	00:00	5.79 pH	18.02 °C	79.45 µS/cm	1.52 mg/L		117.5 mV	10.05 ft	200.00 ml/min
3/12/2021 11:38 AM	05:00	5.68 pH	18.04 °C	80.23 µS/cm	1.19 mg/L	26.50 NTU	111.1 mV	11.25 ft	200.00 ml/min
3/12/2021 11:43 AM	10:00	5.66 pH	18.20 °C	80.28 µS/cm	1.18 mg/L	21.80 NTU	112.7 mV	11.40 ft	200.00 ml/min
3/12/2021 11:48 AM	15:00	5.64 pH	18.36 °C	80.11 µS/cm	1.14 mg/L	19.90 NTU	114.4 mV	11.45 ft	200.00 ml/min
3/12/2021 11:53 AM	20:00	5.66 pH	18.77 °C	79.72 µS/cm	1.10 mg/L	16.10 NTU	114.9 mV	11.50 ft	200.00 ml/min
3/12/2021 11:58 AM	25:00	5.66 pH	18.80 °C	79.78 µS/cm	1.07 mg/L	14.10 NTU	116.4 mV	11.50 ft	200.00 ml/min
3/12/2021 12:03 PM	30:00	5.66 pH	18.53 °C	79.72 µS/cm	1.06 mg/L	11.50 NTU	117.1 mV	11.50 ft	200.00 ml/min
3/12/2021 12:08 PM	35:00	5.62 pH	18.53 °C	79.69 µS/cm	1.06 mg/L	11.60 NTU	119.9 mV	11.50 ft	200.00 ml/min
3/12/2021 12:13 PM	40:00	5.63 pH	18.39 °C	79.77 µS/cm	1.06 mg/L	11.45 NTU	119.3 mV	11.50 ft	200.00 ml/min
3/12/2021 12:18 PM	45:00	5.65 pH	18.65 °C	79.71 µS/cm	1.05 mg/L	9.99 NTU	120.3 mV	11.50 ft	200.00 ml/min
3/12/2021 12:23 PM	50:00	5.65 pH	18.72 °C	79.64 µS/cm	1.06 mg/L	10.24 NTU	121.0 mV	11.50 ft	200.00 ml/min
3/12/2021 12:28 PM	55:00	5.62 pH	18.88 °C	79.71 µS/cm	1.04 mg/L	8.11 NTU	123.2 mV	11.60 ft	200.00 ml/min
3/12/2021 12:30 PM	56:54	5.63 pH	18.88 °C	79.55 µS/cm	1.05 mg/L	6.60 NTU	127.4 mV	11.60 ft	200.00 ml/min
3/12/2021 12:35 PM	01:01:54	5.64 pH	19.01 °C	79.93 µS/cm	1.07 mg/L	6.18 NTU	188.2 mV	11.60 ft	200.00 ml/min
3/12/2021 12:40 PM	01:06:54	5.64 pH	18.94 °C	79.94 µS/cm	1.06 mg/L	6.17 NTU	127.5 mV	11.60 ft	200.00 ml/min

3/12/2021 12:45 PM	01:11:54	5.62 pH	19.02 °C	79.92 µS/cm	1.05 mg/L	5.92 NTU	128.3 mV	11.60 ft	200.00 ml/min
3/12/2021 12:50 PM	01:16:54	5.63 pH	19.11 °C	79.87 µS/cm	1.07 mg/L	5.38 NTU	127.8 mV	11.60 ft	200.00 ml/min
3/12/2021 12:55 PM	01:21:54	5.64 pH	19.11 °C	79.88 µS/cm	1.07 mg/L	5.39 NTU	128.0 mV	11.60 ft	200.00 ml/min
3/12/2021 1:00 PM	01:26:54	5.64 pH	19.22 °C	79.92 µS/cm	1.07 mg/L	5.05 NTU	128.0 mV	11.60 ft	200.00 ml/min
3/12/2021 1:05 PM	01:31:54	5.60 pH	19.15 °C	79.92 µS/cm	1.05 mg/L	5.80 NTU	129.9 mV	11.60 ft	200.00 ml/min
3/12/2021 1:10 PM	01:36:54	5.62 pH	19.08 °C	80.05 µS/cm	1.05 mg/L	5.95 NTU	129.1 mV	11.60 ft	200.00 ml/min
3/12/2021 1:15 PM	01:41:54	5.63 pH	19.02 °C	80.17 µS/cm	1.07 mg/L	5.94 NTU	196.0 mV	11.60 ft	200.00 ml/min
3/12/2021 1:20 PM	01:46:54	5.65 pH	19.21 °C	80.12 µS/cm	1.07 mg/L	5.47 NTU	194.0 mV	11.60 ft	200.00 ml/min
3/12/2021 1:25 PM	01:51:54	5.60 pH	19.28 °C	80.04 µS/cm	1.06 mg/L	4.84 NTU	197.6 mV	11.60 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWC-112	Grab Sample.

Low-Flow Test Report:

Test Date / Time: 3/16/2021 9:44:59 AM

Project: GP-Plant Hammond

Operator Name: Chad Russo

Location Name: HGWA-113 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 26.52 ft Total Depth: 36.53 ft Initial Depth to Water: 5.43 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 32 ft Estimated Total Volume Pumped: 18 Liter Flow Cell Volume: 90 ml Final Flow Rate: 100 ml/min Final Draw Down: 8.47 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Five Bottles: Metals, TDS, Inorganics, Radium

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	
3/16/2021 9:44 AM	00:00	6.20 pH	14.66 °C	115.31 µS/cm	2.78 mg/L		99.2 mV	5.43 ft	100.00 ml/min
3/16/2021 9:49 AM	05:00	6.20 pH	13.50 °C	116.67 µS/cm	2.10 mg/L	16.90 NTU	82.5 mV	6.63 ft	100.00 ml/min
3/16/2021 9:54 AM	10:00	6.20 pH	13.18 °C	116.25 µS/cm	2.22 mg/L	16.50 NTU	80.8 mV	6.90 ft	100.00 ml/min
3/16/2021 9:59 AM	15:00	6.19 pH	13.04 °C	116.74 µS/cm	2.11 mg/L	20.50 NTU	80.5 mV	7.36 ft	100.00 ml/min
3/16/2021 10:04 AM	20:00	6.18 pH	12.99 °C	117.52 µS/cm	1.97 mg/L	22.20 NTU	80.8 mV	7.67 ft	100.00 ml/min
3/16/2021 10:09 AM	25:00	6.18 pH	12.82 °C	117.48 µS/cm	1.91 mg/L	26.30 NTU	79.2 mV	7.96 ft	100.00 ml/min
3/16/2021 10:14 AM	30:00	6.11 pH	12.80 °C	117.76 µS/cm	1.90 mg/L	29.20 NTU	81.7 mV	8.48 ft	100.00 ml/min
3/16/2021 10:19 AM	35:00	6.13 pH	12.84 °C	118.61 µS/cm	1.87 mg/L	30.20 NTU	79.7 mV	8.57 ft	100.00 ml/min
3/16/2021 10:24 AM	40:00	6.12 pH	12.86 °C	119.09 µS/cm	1.85 mg/L	37.60 NTU	81.5 mV	8.95 ft	100.00 ml/min
3/16/2021 10:29 AM	45:00	6.13 pH	12.89 °C	119.84 µS/cm	1.81 mg/L	66.50 NTU	111.3 mV	9.22 ft	100.00 ml/min
3/16/2021 10:34 AM	50:00	6.14 pH	12.93 °C	120.59 µS/cm	1.80 mg/L	58.60 NTU	81.6 mV	9.50 ft	100.00 ml/min
3/16/2021 10:39 AM	55:00	6.16 pH	12.90 °C	120.70 µS/cm	1.78 mg/L	49.30 NTU	110.3 mV	9.71 ft	100.00 ml/min
3/16/2021 10:44 AM	01:00:00	6.13 pH	12.72 °C	120.82 µS/cm	1.79 mg/L	61.40 NTU	112.9 mV	9.97 ft	100.00 ml/min
3/16/2021 10:49 AM	01:05:00	6.13 pH	12.68 °C	121.28 µS/cm	1.80 mg/L	67.40 NTU	113.2 mV	10.22 ft	100.00 ml/min
3/16/2021 10:54 AM	01:10:00	6.15 pH	12.76 °C	121.30 µS/cm	1.79 mg/L	64.80 NTU	112.4 mV	10.47 ft	100.00 ml/min

3/16/2021 10:59 AM	01:15:00	6.16 pH	12.83 °C	121.41 µS/cm	1.80 mg/L	71.10 NTU	112.3 mV	10.67 ft	100.00 ml/min
3/16/2021 11:04 AM	01:20:00	6.14 pH	12.88 °C	121.51 µS/cm	1.79 mg/L	53.40 NTU	113.4 mV	10.92 ft	100.00 ml/min
3/16/2021 11:09 AM	01:25:00	6.15 pH	12.90 °C	121.72 µS/cm	1.79 mg/L	67.40 NTU	80.8 mV	11.12 ft	100.00 ml/min
3/16/2021 11:14 AM	01:30:00	6.15 pH	12.99 °C	121.95 µS/cm	1.75 mg/L	77.00 NTU	80.3 mV	11.35 ft	100.00 ml/min
3/16/2021 11:19 AM	01:35:00	6.16 pH	13.13 °C	122.23 µS/cm	1.75 mg/L	66.40 NTU	80.5 mV	11.59 ft	100.00 ml/min
3/16/2021 11:24 AM	01:40:00	6.16 pH	13.18 °C	122.22 µS/cm	1.73 mg/L	76.10 NTU	79.8 mV	11.74 ft	100.00 ml/min
3/16/2021 11:29 AM	01:45:00	6.15 pH	13.22 °C	122.11 µS/cm	1.73 mg/L	72.50 NTU	80.5 mV	11.92 ft	100.00 ml/min
3/16/2021 11:34 AM	01:50:00	6.17 pH	13.18 °C	122.04 µS/cm	1.72 mg/L	63.70 NTU	78.1 mV	12.10 ft	100.00 ml/min
3/16/2021 11:39 AM	01:55:00	6.17 pH	13.22 °C	121.89 µS/cm	1.72 mg/L	20.00 NTU	80.0 mV	12.30 ft	100.00 ml/min
3/16/2021 11:44 AM	02:00:00	6.15 pH	13.23 °C	122.04 µS/cm	1.72 mg/L	10.00 NTU	80.3 mV	12.45 ft	100.00 ml/min
3/16/2021 11:49 AM	02:05:00	6.16 pH	13.23 °C	122.25 µS/cm	1.73 mg/L	87.00 NTU	79.8 mV	12.65 ft	100.00 ml/min
3/16/2021 11:54 AM	02:10:00	6.17 pH	13.25 °C	122.25 µS/cm	1.70 mg/L	74.20 NTU	78.5 mV	12.72 ft	100.00 ml/min
3/16/2021 11:59 AM	02:15:00	6.17 pH	13.27 °C	122.11 µS/cm	1.70 mg/L	58.40 NTU	80.0 mV	12.87 ft	100.00 ml/min
3/16/2021 12:04 PM	02:20:00	6.15 pH	13.32 °C	121.92 µS/cm	1.68 mg/L	49.30 NTU	80.3 mV	13.00 ft	100.00 ml/min
3/16/2021 12:09 PM	02:25:00	6.16 pH	13.31 °C	121.62 µS/cm	1.68 mg/L	63.40 NTU	79.8 mV	13.15 ft	100.00 ml/min
3/16/2021 12:14 PM	02:30:00	6.16 pH	13.33 °C	121.33 µS/cm	1.69 mg/L	69.80 NTU	77.9 mV	13.25 ft	100.00 ml/min
3/16/2021 12:19 PM	02:35:00	6.17 pH	13.33 °C	121.11 µS/cm	1.71 mg/L	59.00 NTU	79.9 mV	13.40 ft	100.00 ml/min
3/16/2021 12:24 PM	02:40:00	6.15 pH	13.37 °C	120.78 µS/cm	1.70 mg/L	55.30 NTU	78.4 mV	13.50 ft	100.00 ml/min
3/16/2021 12:29 PM	02:45:00	6.16 pH	13.33 °C	120.40 µS/cm	1.73 mg/L	58.30 NTU	78.1 mV	13.60 ft	100.00 ml/min
3/16/2021 12:34 PM	02:50:00	6.16 pH	13.30 °C	119.98 µS/cm	1.71 mg/L	50.20 NTU	77.9 mV	13.70 ft	100.00 ml/min
3/16/2021 12:39 PM	02:55:00	6.17 pH	13.37 °C	119.81 µS/cm	1.73 mg/L	43.50 NTU	77.6 mV	13.80 ft	100.00 ml/min
3/16/2021 12:44 PM	03:00:00	6.14 pH	13.41 °C	119.38 µS/cm	1.72 mg/L	40.30 NTU	80.2 mV	13.90 ft	100.00 ml/min

Samples

Sample ID:	Description:
HGWA-113	Grab Sample.
HGWA-113 Filtered	Filtered Sample.

Low-Flow Test Report:

Test Date / Time: 3/17/2021 11:03:24 AM

Project: GP-Plant Hammond

Operator Name: Chad Russo

Location Name: HGWC-101 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 27.94 ft Total Depth: 37.94 ft Initial Depth to Water: 13.05 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 5.5 Liter Flow Cell Volume: 90 ml Final Flow Rate: 100 ml/min Final Draw Down: 2.28 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Five Bottles: Metals, TDS, Inorganics, Radium

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	
3/17/2021 11:03 AM	00:00	6.30 pH	14.90 °C	281.25 µS/cm	3.88 mg/L		83.8 mV	13.05 ft	200.00 ml/min
3/17/2021 11:08 AM	05:00	5.61 pH	16.67 °C	243.29 µS/cm	1.77 mg/L	3.56 NTU	107.1 mV	14.63 ft	200.00 ml/min
3/17/2021 11:13 AM	10:00	5.56 pH	16.76 °C	232.31 µS/cm	2.51 mg/L	1.85 NTU	156.1 mV	15.17 ft	200.00 ml/min
3/17/2021 11:18 AM	15:00	5.52 pH	16.29 °C	234.78 µS/cm	2.48 mg/L	1.32 NTU	113.3 mV	15.20 ft	100.00 ml/min
3/17/2021 11:23 AM	20:00	5.42 pH	15.93 °C	265.86 µS/cm	1.79 mg/L	0.98 NTU	160.0 mV	15.20 ft	100.00 ml/min
3/17/2021 11:28 AM	25:00	5.39 pH	15.94 °C	282.11 µS/cm	1.74 mg/L	0.72 NTU	112.1 mV	15.23 ft	100.00 ml/min
3/17/2021 11:33 AM	30:00	5.38 pH	15.94 °C	287.46 µS/cm	1.65 mg/L	0.77 NTU	142.1 mV	15.26 ft	100.00 ml/min
3/17/2021 11:38 AM	35:00	5.39 pH	16.00 °C	292.56 µS/cm	1.53 mg/L	0.62 NTU	101.2 mV	15.30 ft	100.00 ml/min
3/17/2021 11:43 AM	40:00	5.41 pH	15.99 °C	295.20 µS/cm	1.47 mg/L	0.52 NTU	96.8 mV	15.33 ft	100.00 ml/min

Samples

Sample ID:	Description:
HGWC-101	Grab Sample.

Low-Flow Test Report:

Test Date / Time: 3/17/2021 1:50:02 PM

Project: GP-Plant Hammond

Operator Name: Chad Russo

Location Name: HGWC-102 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 27.43 ft Total Depth: 37.43 ft Initial Depth to Water: 12.59 ft	Pump Type: Peri Tubing Type: Polyethylene Pump Intake From TOC: 32 ft Estimated Total Volume Pumped: 6 Liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.16 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Five Bottles: Metals, TDS, Inorganics, Radium

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	
3/17/2021 1:50 PM	00:00	5.65 pH	16.88 °C	560.05 µS/cm	2.98 mg/L		101.2 mV	12.59 ft	200.00 ml/min
3/17/2021 1:55 PM	05:00	5.62 pH	16.70 °C	575.72 µS/cm	1.89 mg/L	6.30 NTU	149.9 mV	12.75 ft	200.00 ml/min
3/17/2021 2:00 PM	10:00	5.64 pH	16.86 °C	599.43 µS/cm	1.51 mg/L	5.26 NTU	99.5 mV	12.75 ft	200.00 ml/min
3/17/2021 2:05 PM	15:00	5.73 pH	16.92 °C	758.92 µS/cm	0.36 mg/L	4.28 NTU	121.2 mV	12.75 ft	200.00 ml/min
3/17/2021 2:10 PM	20:00	5.75 pH	16.92 °C	799.07 µS/cm	0.19 mg/L	3.72 NTU	79.3 mV	12.75 ft	200.00 ml/min
3/17/2021 2:15 PM	25:00	5.77 pH	16.96 °C	808.79 µS/cm	0.14 mg/L	3.43 NTU	100.9 mV	12.75 ft	200.00 ml/min
3/17/2021 2:20 PM	30:00	5.78 pH	16.88 °C	814.16 µS/cm	0.12 mg/L	2.42 NTU	77.2 mV	12.75 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWC-102	Grab Sample.

Low-Flow Test Report:

Test Date / Time: 3/18/2021 9:38:36 AM

Project: GP-Plant Hammond

Operator Name: Vashish Taukoor

Location Name: HGWC-103 Well Diameter: 2 in Screen Length: 10 ft Top of Screen: 27.68 ft Total Depth: 37.68 ft Initial Depth to Water: 12.75 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 28 Liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.2 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Five bottles: Metals, TDS, Inorganics, Radium

Very turbid water

Turbidity less than 10 NTU after 3 hours. Collected sample without filter.

Weather Conditions:

Sunny

62 dg F

No wind

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	
3/18/2021 9:38 AM	00:00	5.50 pH	17.50 °C	682.22 µS/cm	0.44 mg/L	58.30 NTU	101.9 mV	12.85 ft	100.00 ml/min
3/18/2021 9:43 AM	05:00	5.50 pH	17.59 °C	679.30 µS/cm	0.41 mg/L	53.50 NTU	96.5 mV	12.85 ft	100.00 ml/min
3/18/2021 9:48 AM	10:00	5.50 pH	17.65 °C	678.34 µS/cm	0.47 mg/L	48.60 NTU	128.3 mV	12.85 ft	100.00 ml/min
3/18/2021 9:53 AM	15:00	5.50 pH	17.73 °C	682.10 µS/cm	0.44 mg/L	43.80 NTU	97.8 mV	12.85 ft	100.00 ml/min
3/18/2021 9:58 AM	20:00	5.50 pH	17.72 °C	654.55 µS/cm	0.50 mg/L	39.00 NTU	130.8 mV	12.85 ft	100.00 ml/min
3/18/2021 10:03 AM	25:00	5.51 pH	17.76 °C	678.09 µS/cm	0.50 mg/L	37.70 NTU	131.6 mV	12.85 ft	100.00 ml/min
3/18/2021 10:08 AM	30:00	5.51 pH	17.59 °C	679.83 µS/cm	0.47 mg/L	34.80 NTU	99.1 mV	12.85 ft	100.00 ml/min
3/18/2021 10:13 AM	35:00	5.50 pH	17.90 °C	676.45 µS/cm	0.47 mg/L	30.70 NTU	133.3 mV	12.85 ft	100.00 ml/min
3/18/2021 10:18 AM	40:00	5.51 pH	17.88 °C	677.00 µS/cm	0.29 mg/L	29.70 NTU	134.4 mV	12.95 ft	200.00 ml/min
3/18/2021 10:23 AM	45:00	5.50 pH	17.95 °C	677.43 µS/cm	0.29 mg/L	24.90 NTU	134.5 mV	12.95 ft	200.00 ml/min

3/18/2021 10:28 AM	50:00	5.51 pH	17.92 °C	679.21 µS/cm	0.28 mg/L	20.00 NTU	99.8 mV	12.95 ft	200.00 ml/min
3/18/2021 10:33 AM	55:00	5.51 pH	17.91 °C	679.46 µS/cm	0.28 mg/L	15.90 NTU	135.2 mV	12.95 ft	200.00 ml/min
3/18/2021 10:38 AM	01:00:00	5.51 pH	17.96 °C	679.09 µS/cm	0.30 mg/L	13.40 NTU	101.4 mV	12.95 ft	200.00 ml/min
3/18/2021 10:43 AM	01:05:00	5.51 pH	17.91 °C	681.58 µS/cm	0.34 mg/L	12.90 NTU	133.7 mV	12.95 ft	200.00 ml/min
3/18/2021 10:48 AM	01:10:00	5.51 pH	17.87 °C	679.53 µS/cm	0.31 mg/L	12.30 NTU	132.9 mV	12.95 ft	200.00 ml/min
3/18/2021 10:53 AM	01:15:00	5.52 pH	17.50 °C	683.64 µS/cm	0.33 mg/L	11.80 NTU	132.5 mV	12.95 ft	200.00 ml/min
3/18/2021 10:58 AM	01:20:00	5.52 pH	17.65 °C	681.88 µS/cm	0.31 mg/L	10.90 NTU	132.5 mV	12.95 ft	200.00 ml/min
3/18/2021 11:03 AM	01:25:00	5.51 pH	17.62 °C	683.03 µS/cm	0.35 mg/L	9.97 NTU	132.8 mV	12.95 ft	200.00 ml/min
3/18/2021 11:08 AM	01:30:00	5.51 pH	17.65 °C	682.60 µS/cm	0.32 mg/L	9.16 NTU	100.9 mV	12.95 ft	200.00 ml/min
3/18/2021 11:13 AM	01:35:00	5.52 pH	17.68 °C	684.24 µS/cm	0.32 mg/L	8.88 NTU	135.0 mV	12.95 ft	200.00 ml/min
3/18/2021 11:18 AM	01:40:00	5.52 pH	17.54 °C	686.09 µS/cm	0.34 mg/L	8.74 NTU	100.0 mV	12.95 ft	200.00 ml/min
3/18/2021 11:23 AM	01:45:00	5.52 pH	17.74 °C	684.71 µS/cm	0.33 mg/L	8.48 NTU	131.2 mV	12.95 ft	200.00 ml/min
3/18/2021 11:28 AM	01:50:00	5.51 pH	17.71 °C	686.16 µS/cm	0.31 mg/L	8.04 NTU	133.9 mV	12.95 ft	200.00 ml/min
3/18/2021 11:33 AM	01:55:00	5.51 pH	17.70 °C	692.80 µS/cm	0.31 mg/L	7.28 NTU	133.6 mV	12.95 ft	200.00 ml/min
3/18/2021 11:38 AM	02:00:00	5.52 pH	17.54 °C	686.93 µS/cm	0.31 mg/L	6.33 NTU	134.1 mV	12.95 ft	200.00 ml/min
3/18/2021 11:43 AM	02:05:00	5.52 pH	17.45 °C	687.57 µS/cm	0.32 mg/L	7.05 NTU	132.4 mV	12.95 ft	200.00 ml/min
3/18/2021 11:48 AM	02:10:00	5.52 pH	17.60 °C	687.53 µS/cm	0.30 mg/L	6.84 NTU	100.4 mV	12.95 ft	200.00 ml/min
3/18/2021 11:53 AM	02:15:00	5.51 pH	17.58 °C	688.39 µS/cm	0.31 mg/L	6.46 NTU	101.0 mV	12.95 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWC-103	Grab Sample.

Low-Flow Test Report:

Test Date / Time: 3/18/2021 11:46:33 AM

Project: GP-Plant Hammond

Operator Name: Thomas Kessler

Location Name: HGWC-105 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 34.67 ft Total Depth: 44.67 ft Initial Depth to Water: 15.79 ft	Pump Type: Bladder Tubing Type: polyethylene Pump Intake From TOC: 39.67 ft Estimated Total Volume Pumped: 11 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.29 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728566
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Test Notes:

Five bottles: Metals, TDS, Inorganics, Radium.

Weather Conditions:

Sunny, 65 degrees.

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	
3/18/2021 11:46 AM	00:00	6.65 pH	18.08 °C	560.50 µS/cm	5.15 mg/L	11.90 NTU	70.2 mV	15.79 ft	200.00 ml/min
3/18/2021 11:51 AM	05:00	6.62 pH	17.63 °C	675.99 µS/cm	1.10 mg/L	69.50 NTU	24.4 mV	16.08 ft	200.00 ml/min
3/18/2021 11:56 AM	10:00	6.66 pH	17.67 °C	686.42 µS/cm	0.80 mg/L	21.80 NTU	22.5 mV	16.08 ft	200.00 ml/min
3/18/2021 12:01 PM	15:00	6.66 pH	17.74 °C	684.37 µS/cm	0.64 mg/L	12.14 NTU	18.1 mV	16.08 ft	200.00 ml/min
3/18/2021 12:06 PM	20:00	6.65 pH	17.61 °C	676.35 µS/cm	0.61 mg/L	12.82 NTU	11.0 mV	16.08 ft	200.00 ml/min
3/18/2021 12:11 PM	25:00	6.62 pH	17.54 °C	666.63 µS/cm	0.60 mg/L	9.93 NTU	-1.1 mV	16.08 ft	200.00 ml/min
3/18/2021 12:16 PM	30:00	6.61 pH	17.50 °C	657.34 µS/cm	0.52 mg/L	8.32 NTU	-8.7 mV	16.08 ft	200.00 ml/min
3/18/2021 12:21 PM	35:00	6.60 pH	17.37 °C	649.60 µS/cm	0.50 mg/L	7.65 NTU	-14.0 mV	16.08 ft	200.00 ml/min
3/18/2021 12:26 PM	40:00	6.59 pH	17.36 °C	642.21 µS/cm	0.49 mg/L	6.60 NTU	-8.4 mV	16.08 ft	200.00 ml/min
3/18/2021 12:31 PM	45:00	6.59 pH	17.36 °C	636.38 µS/cm	0.44 mg/L	5.62 NTU	-11.4 mV	16.08 ft	200.00 ml/min
3/18/2021 12:36 PM	50:00	6.58 pH	17.46 °C	631.55 µS/cm	0.41 mg/L	5.07 NTU	-25.3 mV	16.08 ft	200.00 ml/min
3/18/2021 12:41 PM	55:00	6.57 pH	17.61 °C	627.42 µS/cm	0.38 mg/L	4.52 NTU	-28.2 mV	16.08 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWC-105	Grab Sample.

Low-Flow Test Report:

Test Date / Time: 3/18/2021 3:53:48 PM

Project: GP-Plant Hammond

Operator Name: Chad Russo

Location Name: HGWC-107 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 28.2 ft Total Depth: 38.2 ft Initial Depth to Water: 13.88 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 24.473334 Liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: -0.03 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Five Bottles: Metals, TDS, Inorganics, Radium

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	
3/18/2021 3:53 PM	00:00	6.69 pH	17.19 °C	400.61 µS/cm	4.12 mg/L		75.8 mV	13.88 ft	200.00 ml/min
3/18/2021 3:58 PM	05:00	6.33 pH	17.74 °C	403.84 µS/cm	2.12 mg/L	4.66 NTU	74.0 mV	13.90 ft	200.00 ml/min
3/18/2021 4:03 PM	10:00	6.26 pH	17.46 °C	407.70 µS/cm	1.24 mg/L	5.64 NTU	96.6 mV	13.90 ft	200.00 ml/min
3/18/2021 4:08 PM	15:00	6.24 pH	17.36 °C	408.57 µS/cm	0.76 mg/L	5.08 NTU	71.9 mV	13.90 ft	200.00 ml/min
3/18/2021 4:13 PM	20:00	6.24 pH	17.33 °C	409.84 µS/cm	0.52 mg/L	4.50 NTU	93.8 mV	13.90 ft	200.00 ml/min
3/18/2021 4:18 PM	25:00	6.23 pH	17.32 °C	408.88 µS/cm	0.41 mg/L	7.32 NTU	70.9 mV	13.90 ft	200.00 ml/min
3/18/2021 4:23 PM	30:00	6.21 pH	17.43 °C	409.49 µS/cm	0.36 mg/L	14.60 NTU	93.6 mV	13.90 ft	200.00 ml/min
3/18/2021 4:28 PM	35:00	6.22 pH	17.53 °C	407.92 µS/cm	0.33 mg/L	24.80 NTU	71.7 mV	13.90 ft	200.00 ml/min
3/18/2021 4:33 PM	40:00	6.22 pH	17.38 °C	407.85 µS/cm	0.32 mg/L	32.20 NTU	69.8 mV	13.90 ft	200.00 ml/min
3/18/2021 4:38 PM	45:00	6.22 pH	17.19 °C	408.38 µS/cm	0.32 mg/L	30.80 NTU	91.7 mV	13.90 ft	200.00 ml/min
3/18/2021 4:43 PM	50:00	6.20 pH	16.97 °C	407.69 µS/cm	0.32 mg/L	29.30 NTU	71.1 mV	13.90 ft	200.00 ml/min
3/18/2021 4:48 PM	55:00	6.21 pH	16.92 °C	408.55 µS/cm	0.31 mg/L	21.50 NTU	69.4 mV	13.90 ft	200.00 ml/min
3/18/2021 4:53 PM	01:00:00	6.21 pH	16.87 °C	408.04 µS/cm	0.30 mg/L	19.10 NTU	91.2 mV	13.85 ft	200.00 ml/min
3/18/2021 4:58 PM	01:05:00	6.21 pH	16.92 °C	407.34 µS/cm	0.29 mg/L	18.10 NTU	69.9 mV	13.85 ft	200.00 ml/min
3/18/2021 5:03 PM	01:10:00	6.20 pH	16.86 °C	407.69 µS/cm	0.30 mg/L	14.70 NTU	69.4 mV	13.85 ft	200.00 ml/min

3/18/2021 5:08 PM	01:15:00	6.20 pH	16.85 °C	407.06 µS/cm	0.29 mg/L	12.10 NTU	91.0 mV	13.85 ft	200.00 ml/min
3/18/2021 5:13 PM	01:20:00	6.20 pH	16.82 °C	407.00 µS/cm	0.29 mg/L	11.43 NTU	69.7 mV	13.85 ft	200.00 ml/min
3/18/2021 5:18 PM	01:25:00	6.20 pH	16.83 °C	407.42 µS/cm	0.29 mg/L	10.56 NTU	90.8 mV	13.85 ft	200.00 ml/min
3/18/2021 5:23 PM	01:30:00	6.19 pH	16.92 °C	406.16 µS/cm	0.29 mg/L	10.03 NTU	70.2 mV	13.85 ft	200.00 ml/min
3/18/2021 5:28 PM	01:35:00	6.20 pH	16.83 °C	406.64 µS/cm	0.29 mg/L	9.56 NTU	91.0 mV	13.85 ft	200.00 ml/min
3/18/2021 5:33 PM	01:40:00	6.20 pH	16.85 °C	405.97 µS/cm	0.29 mg/L	8.15 NTU	69.7 mV	13.85 ft	200.00 ml/min
3/18/2021 5:36 PM	01:42:22	6.21 pH	16.83 °C	402.25 µS/cm	0.29 mg/L		67.7 mV	13.85 ft	200.00 ml/min
3/18/2021 5:41 PM	01:47:22	6.21 pH	16.79 °C	406.31 µS/cm	0.30 mg/L	6.91 NTU	89.0 mV	13.85 ft	200.00 ml/min
3/18/2021 5:46 PM	01:52:22	6.20 pH	16.74 °C	405.19 µS/cm	0.30 mg/L	6.79 NTU	69.1 mV	13.85 ft	200.00 ml/min
3/18/2021 5:51 PM	01:57:22	6.20 pH	16.80 °C	405.96 µS/cm	0.30 mg/L	5.90 NTU	90.1 mV	13.85 ft	200.00 ml/min
3/18/2021 5:56 PM	02:02:22	6.20 pH	16.90 °C	404.58 µS/cm	0.30 mg/L	4.63 NTU	69.2 mV	13.85 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWC-107	Grab Sample.

Low-Flow Test Report:

Test Date / Time: 3/17/2021 11:52:22 AM

Project: GP-Plant Hammond

Operator Name: Vashish Taukooor

Location Name: HGWC-109 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 21.36 ft Total Depth: 31.36 ft Initial Depth to Water: 7.35 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 26 ft Estimated Total Volume Pumped: 18 Liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.07 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Five bottles: Metals, TDS, Inorganics, Radium

Very turbid water, no odor

Weather Conditions:

Cloudy

No wind

57 deg 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 %	+/- 0.2	+/- 5	+/- 10	+/- 0.3	
3/17/2021 11:52 AM	00:00	6.37 pH	16.38 °C	282.84 µS/cm	0.71 mg/L	23.70 NTU	12.3 mV	7.42 ft	200.00 ml/min
3/17/2021 11:57 AM	05:00	6.42 pH	16.38 °C	290.16 µS/cm	0.74 mg/L	20.50 NTU	9.0 mV	7.42 ft	200.00 ml/min
3/17/2021 12:02 PM	10:00	6.45 pH	16.38 °C	296.72 µS/cm	0.72 mg/L	17.30 NTU	-5.8 mV	7.42 ft	200.00 ml/min
3/17/2021 12:07 PM	15:00	6.45 pH	16.39 °C	301.73 µS/cm	0.75 mg/L	15.10 NTU	-7.9 mV	7.42 ft	200.00 ml/min
3/17/2021 12:12 PM	20:00	6.49 pH	16.43 °C	188.83 µS/cm	0.75 mg/L	12.80 NTU	-8.3 mV	7.42 ft	200.00 ml/min
3/17/2021 12:17 PM	25:00	6.50 pH	16.47 °C	303.05 µS/cm	0.70 mg/L	10.60 NTU	-8.1 mV	7.42 ft	200.00 ml/min
3/17/2021 12:22 PM	30:00	6.52 pH	16.44 °C	308.64 µS/cm	0.73 mg/L	8.41 NTU	-11.7 mV	7.42 ft	200.00 ml/min
3/17/2021 12:27 PM	35:00	6.53 pH	16.51 °C	309.53 µS/cm	0.72 mg/L	7.52 NTU	-11.7 mV	7.42 ft	200.00 ml/min
3/17/2021 12:32 PM	40:00	6.52 pH	16.52 °C	312.07 µS/cm	0.74 mg/L	6.70 NTU	-12.0 mV	7.42 ft	200.00 ml/min
3/17/2021 12:37 PM	45:00	6.54 pH	16.52 °C	298.00 µS/cm	0.77 mg/L	6.23 NTU	-12.6 mV	7.42 ft	200.00 ml/min
3/17/2021 12:42 PM	50:00	6.56 pH	16.56 °C	318.93 µS/cm	0.82 mg/L	5.77 NTU	-17.3 mV	7.42 ft	200.00 ml/min
3/17/2021 12:47 PM	55:00	6.58 pH	16.66 °C	318.33 µS/cm	0.77 mg/L	5.20 NTU	-18.2 mV	7.42 ft	200.00 ml/min

3/17/2021 12:52 PM	01:00:00	6.55 pH	16.69 °C	315.75 µS/cm	0.73 mg/L	4.89 NTU	-14.5 mV	7.42 ft	200.00 ml/min
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Samples

Sample ID:	Description:
HGWC-109	Grab Sample.

Low-Flow Test Report:

Test Date / Time: 3/19/2021 8:35:06 AM

Project: GP-Plant Hammond

Operator Name: Thomas Kessler

Location Name: HGWC-117 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 30.62 m Total Depth: 40.62 ft Initial Depth to Water: 13.97 ft	Pump Type: Bladder Tubing Type: polyethylene Pump Intake From TOC: 35.62 ft Estimated Total Volume Pumped: 37 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728566
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Test Notes:

Five bottles: Metals, TDS, Inorganics, Radium.

Weather Conditions:

Cloudy, 45 degrees.

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	
3/19/2021 8:35 AM	00:00	6.25 pH	14.42 °C	451.84 µS/cm	4.64 mg/L	14.60 NTU	44.3 mV	13.97 ft	200.00 ml/min
3/19/2021 8:40 AM	05:00	5.71 pH	15.53 °C	426.39 µS/cm	0.34 mg/L	18.80 NTU	90.1 mV	13.97 ft	200.00 ml/min
3/19/2021 8:45 AM	10:00	5.78 pH	15.81 °C	459.73 µS/cm	0.15 mg/L	47.60 NTU	81.3 mV	13.97 ft	200.00 ml/min
3/19/2021 8:50 AM	15:00	5.87 pH	15.77 °C	492.33 µS/cm	0.12 mg/L	56.30 NTU	73.2 mV	13.97 ft	200.00 ml/min
3/19/2021 8:55 AM	20:00	5.95 pH	15.83 °C	530.45 µS/cm	0.10 mg/L	45.80 NTU	66.4 mV	13.97 ft	200.00 ml/min
3/19/2021 9:00 AM	25:00	6.00 pH	15.98 °C	558.77 µS/cm	0.10 mg/L	44.20 NTU	63.9 mV	13.97 ft	200.00 ml/min
3/19/2021 9:05 AM	30:00	6.04 pH	15.85 °C	574.06 µS/cm	0.09 mg/L	41.20 NTU	61.5 mV	13.97 ft	200.00 ml/min
3/19/2021 9:10 AM	35:00	6.06 pH	16.00 °C	580.13 µS/cm	0.09 mg/L	39.30 NTU	59.9 mV	13.97 ft	200.00 ml/min
3/19/2021 9:15 AM	40:00	6.08 pH	16.05 °C	583.72 µS/cm	0.08 mg/L	39.40 NTU	58.6 mV	13.97 ft	200.00 ml/min
3/19/2021 9:20 AM	45:00	6.08 pH	16.07 °C	587.37 µS/cm	0.08 mg/L	34.10 NTU	85.8 mV	13.97 ft	200.00 ml/min
3/19/2021 9:25 AM	50:00	6.10 pH	16.20 °C	587.83 µS/cm	0.07 mg/L	30.20 NTU	58.0 mV	13.97 ft	200.00 ml/min
3/19/2021 9:30 AM	55:00	6.09 pH	16.20 °C	588.44 µS/cm	0.08 mg/L	31.40 NTU	56.7 mV	13.97 ft	200.00 ml/min
3/19/2021 9:35 AM	01:00:00	6.10 pH	16.25 °C	591.55 µS/cm	0.06 mg/L	27.40 NTU	55.6 mV	13.97 ft	200.00 ml/min

3/19/2021 9:40 AM	01:05:00	6.11 pH	16.35 °C	592.65 µS/cm	0.06 mg/L	29.70 NTU	54.7 mV	13.97 ft	200.00 ml/min
3/19/2021 9:45 AM	01:10:00	6.12 pH	16.47 °C	593.18 µS/cm	0.07 mg/L	23.50 NTU	54.2 mV	13.97 ft	200.00 ml/min
3/19/2021 9:50 AM	01:15:00	6.12 pH	16.38 °C	593.39 µS/cm	0.07 mg/L	23.80 NTU	53.7 mV	13.97 ft	200.00 ml/min
3/19/2021 9:55 AM	01:20:00	6.12 pH	16.39 °C	593.91 µS/cm	0.06 mg/L	22.40 NTU	53.2 mV	13.97 ft	200.00 ml/min
3/19/2021 10:00 AM	01:25:00	6.11 pH	16.44 °C	595.20 µS/cm	0.06 mg/L	22.10 NTU	53.5 mV	13.97 ft	200.00 ml/min
3/19/2021 10:05 AM	01:30:00	6.12 pH	16.53 °C	593.88 µS/cm	0.06 mg/L	20.40 NTU	52.7 mV	13.97 ft	200.00 ml/min
3/19/2021 10:10 AM	01:35:00	6.13 pH	16.65 °C	596.39 µS/cm	0.05 mg/L	20.30 NTU	52.2 mV	13.97 ft	200.00 ml/min
3/19/2021 10:15 AM	01:40:00	6.13 pH	16.65 °C	595.64 µS/cm	0.06 mg/L	18.10 NTU	52.1 mV	13.97 ft	200.00 ml/min
3/19/2021 10:20 AM	01:45:00	6.13 pH	16.63 °C	593.67 µS/cm	0.06 mg/L	15.84 NTU	51.9 mV	13.97 ft	200.00 ml/min
3/19/2021 10:25 AM	01:50:00	6.14 pH	16.73 °C	595.97 µS/cm	0.06 mg/L	13.80 NTU	51.4 mV	13.97 ft	200.00 ml/min
3/19/2021 10:30 AM	01:55:00	6.13 pH	16.75 °C	595.14 µS/cm	0.06 mg/L	14.30 NTU	51.8 mV	13.97 ft	200.00 ml/min
3/19/2021 10:35 AM	02:00:00	6.13 pH	16.69 °C	596.19 µS/cm	0.05 mg/L	13.00 NTU	51.3 mV	13.97 ft	200.00 ml/min
3/19/2021 10:40 AM	02:05:00	6.13 pH	16.65 °C	597.82 µS/cm	0.06 mg/L	13.30 NTU	75.2 mV	13.97 ft	200.00 ml/min
3/19/2021 10:45 AM	02:10:00	6.13 pH	16.62 °C	592.84 µS/cm	0.06 mg/L	12.50 NTU	52.0 mV	13.97 ft	200.00 ml/min
3/19/2021 10:50 AM	02:15:00	6.14 pH	16.74 °C	596.37 µS/cm	0.05 mg/L	11.20 NTU	50.7 mV	13.97 ft	200.00 ml/min
3/19/2021 10:55 AM	02:20:00	6.14 pH	16.74 °C	598.40 µS/cm	0.06 mg/L	11.60 NTU	74.1 mV	13.97 ft	200.00 ml/min
3/19/2021 11:00 AM	02:25:00	6.12 pH	16.61 °C	595.59 µS/cm	0.07 mg/L	11.40 NTU	52.2 mV	13.97 ft	200.00 ml/min
3/19/2021 11:05 AM	02:30:00	6.13 pH	16.74 °C	596.08 µS/cm	0.07 mg/L	12.82 NTU	50.8 mV	13.97 ft	200.00 ml/min
3/19/2021 11:10 AM	02:35:00	6.14 pH	16.82 °C	595.00 µS/cm	0.06 mg/L	11.77 NTU	50.2 mV	13.97 ft	200.00 ml/min
3/19/2021 11:15 AM	02:40:00	6.14 pH	16.69 °C	596.97 µS/cm	0.07 mg/L	11.96 NTU	49.9 mV	13.97 ft	200.00 ml/min
3/19/2021 11:20 AM	02:45:00	6.14 pH	16.65 °C	597.48 µS/cm	0.08 mg/L	11.19 NTU	49.4 mV	13.97 ft	200.00 ml/min
3/19/2021 11:25 AM	02:50:00	6.14 pH	16.60 °C	596.18 µS/cm	0.07 mg/L	10.77 NTU	49.6 mV	13.97 ft	200.00 ml/min
3/19/2021 11:30 AM	02:55:00	6.13 pH	16.65 °C	595.30 µS/cm	0.05 mg/L	10.17 NTU	49.5 mV	13.97 ft	200.00 ml/min
3/19/2021 11:35 AM	03:00:00	6.13 pH	16.93 °C	597.80 µS/cm	0.06 mg/L	9.71 NTU	49.5 mV	13.97 ft	200.00 ml/min
3/19/2021 11:40 AM	03:05:00	6.14 pH	16.87 °C	595.81 µS/cm	0.07 mg/L	9.46 NTU	49.1 mV	13.97 ft	200.00 ml/min

Samples

Sample ID:	Description:
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HGWC-117

Grab Sample.

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 3/18/2021 2:09:07 PM

Project: GP-Plant Hammond Operator

Name: Thomas Kessler

Location Name: HGWC-118 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 30.9 ft Total Depth: 40.9 ft Initial Depth to Water: 11.8 ft	Pump Type: Bladder Tubing Type: polyethylene Pump Intake From TOC: 35.9 ft Estimated Total Volume Pumped: 36 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.1 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728566
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Test Notes:

Five bottles: Metals, TDS, Inorganics, Radium.

Weather Conditions:

Sunny, 65 degrees.

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	
3/18/2021 2:09 PM	00:00	7.07 pH	19.29 °C	509.78 µS/cm	3.20 mg/L	4.58 NTU	-24.5 mV	11.80 ft	200.00 ml/min
3/18/2021 2:14 PM	05:00	6.97 pH	18.58 °C	520.32 µS/cm	1.32 mg/L	34.30 NTU	35.3 mV	11.90 ft	200.00 ml/min
3/18/2021 2:19 PM	10:00	7.00 pH	18.75 °C	522.73 µS/cm	1.14 mg/L	58.80 NTU	46.9 mV	11.90 ft	200.00 ml/min
3/18/2021 2:24 PM	15:00	7.02 pH	18.84 °C	525.53 µS/cm	0.92 mg/L	63.50 NTU	39.8 mV	11.90 ft	200.00 ml/min
3/18/2021 2:29 PM	20:00	7.04 pH	18.61 °C	526.35 µS/cm	0.81 mg/L	62.80 NTU	37.7 mV	11.90 ft	200.00 ml/min
3/18/2021 2:34 PM	25:00	7.03 pH	18.58 °C	525.12 µS/cm	0.74 mg/L	59.20 NTU	38.1 mV	11.90 ft	200.00 ml/min
3/18/2021 2:39 PM	30:00	7.05 pH	18.26 °C	526.65 µS/cm	0.70 mg/L	53.50 NTU	36.3 mV	11.90 ft	200.00 ml/min
3/18/2021 2:44 PM	35:00	7.06 pH	18.03 °C	526.36 µS/cm	0.65 mg/L	46.50 NTU	35.5 mV	11.90 ft	200.00 ml/min
3/18/2021 2:49 PM	40:00	7.07 pH	18.03 °C	527.82 µS/cm	0.59 mg/L	48.50 NTU	35.9 mV	11.90 ft	200.00 ml/min
3/18/2021 2:54 PM	45:00	7.08 pH	18.08 °C	528.41 µS/cm	0.54 mg/L	49.10 NTU	37.1 mV	11.90 ft	200.00 ml/min
3/18/2021 2:59 PM	50:00	7.08 pH	18.21 °C	529.09 µS/cm	0.49 mg/L	44.00 NTU	38.3 mV	11.90 ft	200.00 ml/min
3/18/2021 3:04 PM	55:00	7.08 pH	18.00 °C	529.00 µS/cm	0.45 mg/L	41.60 NTU	31.8 mV	11.90 ft	200.00 ml/min
3/18/2021 3:09 PM	01:00:00	7.07 pH	17.74 °C	529.72 µS/cm	0.44 mg/L	47.20 NTU	39.5 mV	11.90 ft	200.00 ml/min

3/18/2021 3:14 PM	01:05:00	7.08 pH	17.59 °C	528.83 µS/cm	0.41 mg/L	39.30 NTU	32.3 mV	11.90 ft	200.00 ml/min
3/18/2021 3:19 PM	01:10:00	7.09 pH	17.57 °C	530.60 µS/cm	0.37 mg/L	36.50 NTU	39.6 mV	11.90 ft	200.00 ml/min
3/18/2021 3:24 PM	01:15:00	7.09 pH	17.68 °C	530.95 µS/cm	0.34 mg/L	34.90 NTU	39.9 mV	11.90 ft	200.00 ml/min
3/18/2021 3:29 PM	01:20:00	7.09 pH	17.90 °C	528.26 µS/cm	0.32 mg/L	33.10 NTU	32.7 mV	11.90 ft	200.00 ml/min
3/18/2021 3:34 PM	01:25:00	7.09 pH	17.86 °C	529.33 µS/cm	0.30 mg/L	33.60 NTU	32.6 mV	11.90 ft	200.00 ml/min
3/18/2021 3:39 PM	01:30:00	7.08 pH	17.81 °C	529.78 µS/cm	0.28 mg/L	32.80 NTU	32.8 mV	11.90 ft	200.00 ml/min
3/18/2021 3:44 PM	01:35:00	7.09 pH	17.85 °C	530.64 µS/cm	0.26 mg/L	30.10 NTU	40.0 mV	11.90 ft	200.00 ml/min
3/18/2021 3:49 PM	01:40:00	7.09 pH	17.88 °C	529.24 µS/cm	0.26 mg/L	31.80 NTU	33.0 mV	11.90 ft	200.00 ml/min
3/18/2021 3:54 PM	01:45:00	7.09 pH	17.86 °C	531.22 µS/cm	0.24 mg/L	30.50 NTU	39.9 mV	11.90 ft	200.00 ml/min
3/18/2021 3:59 PM	01:50:00	7.09 pH	17.85 °C	529.26 µS/cm	0.23 mg/L	30.30 NTU	33.0 mV	11.90 ft	200.00 ml/min
3/18/2021 4:04 PM	01:55:00	7.10 pH	17.72 °C	531.28 µS/cm	0.22 mg/L	29.30 NTU	39.9 mV	11.90 ft	200.00 ml/min
3/18/2021 4:09 PM	02:00:00	7.10 pH	17.63 °C	530.05 µS/cm	0.21 mg/L	28.90 NTU	32.7 mV	11.90 ft	200.00 ml/min
3/18/2021 4:14 PM	02:05:00	7.10 pH	17.63 °C	530.09 µS/cm	0.20 mg/L	27.10 NTU	32.3 mV	11.90 ft	200.00 ml/min
3/18/2021 4:19 PM	02:10:00	7.10 pH	17.62 °C	530.50 µS/cm	0.19 mg/L	27.50 NTU	32.2 mV	11.90 ft	200.00 ml/min
3/18/2021 4:24 PM	02:15:00	7.11 pH	17.68 °C	531.72 µS/cm	0.18 mg/L	28.00 NTU	31.8 mV	11.90 ft	200.00 ml/min
3/18/2021 4:29 PM	02:20:00	7.10 pH	17.68 °C	532.25 µS/cm	0.18 mg/L	32.60 NTU	39.1 mV	11.90 ft	200.00 ml/min
3/18/2021 4:34 PM	02:25:00	7.10 pH	17.63 °C	530.03 µS/cm	0.17 mg/L	26.40 NTU	32.2 mV	11.90 ft	200.00 ml/min
3/18/2021 4:39 PM	02:30:00	7.10 pH	17.49 °C	530.76 µS/cm	0.17 mg/L	25.20 NTU	32.4 mV	11.90 ft	200.00 ml/min
3/18/2021 4:44 PM	02:35:00	7.11 pH	17.40 °C	532.58 µS/cm	0.16 mg/L	21.70 NTU	38.8 mV	11.90 ft	200.00 ml/min
3/18/2021 4:49 PM	02:40:00	7.11 pH	17.32 °C	532.56 µS/cm	0.16 mg/L	23.00 NTU	39.3 mV	11.90 ft	200.00 ml/min
3/18/2021 4:54 PM	02:45:00	7.11 pH	17.36 °C	530.32 µS/cm	0.15 mg/L	26.60 NTU	33.2 mV	11.90 ft	200.00 ml/min
3/18/2021 4:59 PM	02:50:00	7.11 pH	17.28 °C	532.82 µS/cm	0.15 mg/L	29.00 NTU	38.9 mV	11.90 ft	200.00 ml/min
3/18/2021 5:04 PM	02:55:00	7.11 pH	17.36 °C	531.51 µS/cm	0.14 mg/L	28.50 NTU	31.8 mV	11.90 ft	200.00 ml/min
3/18/2021 5:09 PM	03:00:00	7.11 pH	17.32 °C	532.77 µS/cm	0.13 mg/L	28.40 NTU	38.6 mV	11.90 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWC-118 HGWC-118 Filtered	Grab Sample. Filtered Sample.

June 2021

Low-Flow Test Report:

Test Date / Time: 6/23/2021 11:24:09 AM

Project: GP-Plant Hammond

Operator Name: Thomas Kessler

Location Name: HGWC-117 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 30.62 ft Total Depth: 40.62 ft Initial Depth to Water: 15.4 ft	Pump Type: Peristaltic Tubing Type: Poly Estimated Total Volume Pumped: 15.5 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728634
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Test Notes:

Pre purged for 10 minutes to establish flow.

Weather Conditions:

Sunny, 80 degrees

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	
6/23/2021 11:24 AM	00:00	5.22 pH	20.29 °C	245.90 µS/cm	2.21 mg/L	2.16 NTU	122.5 mV	15.40 ft	200.00 ml/min
6/23/2021 11:26 AM	02:25	5.30 pH	20.28 °C	273.39 µS/cm	1.96 mg/L	2.16 NTU	167.4 mV	15.40 ft	200.00 ml/min
6/23/2021 11:31 AM	07:25	5.43 pH	20.38 °C	337.75 µS/cm	1.30 mg/L	2.66 NTU	149.7 mV	15.40 ft	200.00 ml/min
6/23/2021 11:36 AM	12:25	5.51 pH	20.40 °C	373.76 µS/cm	0.78 mg/L	2.93 NTU	163.8 mV	15.40 ft	200.00 ml/min
6/23/2021 11:41 AM	17:25	5.52 pH	20.65 °C	383.31 µS/cm	0.63 mg/L	2.46 NTU	168.5 mV	15.40 ft	200.00 ml/min
6/23/2021 11:46 AM	22:25	5.53 pH	20.68 °C	387.49 µS/cm	0.61 mg/L	2.16 NTU	247.4 mV	15.40 ft	200.00 ml/min
6/23/2021 11:51 AM	27:25	5.55 pH	20.65 °C	396.53 µS/cm	0.49 mg/L	2.38 NTU	188.9 mV	15.40 ft	200.00 ml/min
6/23/2021 11:56 AM	32:25	5.56 pH	20.70 °C	404.40 µS/cm	0.38 mg/L	1.50 NTU	254.8 mV	15.40 ft	200.00 ml/min
6/23/2021 12:01 PM	37:25	5.58 pH	20.65 °C	410.32 µS/cm	0.34 mg/L	1.64 NTU	253.5 mV	15.40 ft	200.00 ml/min
6/23/2021 12:06 PM	42:25	5.59 pH	20.69 °C	407.37 µS/cm	0.43 mg/L	1.91 NTU	238.6 mV	15.40 ft	200.00 ml/min
6/23/2021 12:11 PM	47:25	5.63 pH	20.78 °C	433.00 µS/cm	0.26 mg/L	1.32 NTU	236.3 mV	15.40 ft	200.00 ml/min
6/23/2021 12:16 PM	52:25	5.66 pH	20.74 °C	437.20 µS/cm	0.31 mg/L	1.16 NTU	233.6 mV	15.40 ft	200.00 ml/min
6/23/2021 12:21 PM	57:25	5.69 pH	20.87 °C	440.45 µS/cm	0.28 mg/L	1.15 NTU	227.2 mV	15.40 ft	200.00 ml/min
6/23/2021 12:26 PM	01:02:25	5.70 pH	20.83 °C	446.40 µS/cm	0.32 mg/L	0.91 NTU	218.6 mV	15.40 ft	200.00 ml/min

6/23/2021 12:31 PM	01:07:25	5.72 pH	20.83 °C	451.84 µS/cm	0.36 mg/L	0.98 NTU	147.5 mV	15.40 ft	200.00 ml/min
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Samples

Sample ID:	Description:
HGWC-117	Grab Sample.

WELL DEVELOPMENT REPORTS

June 2021

WELL DEVELOPMENT LOG SHEET

Client: <u>CLS</u>	Project No: <u>G.W.C.S.1</u>	Development Date: <u>6/15/11</u>
Site: <u>Plant Hammond</u>	Location: <u>AP-4</u>	Field Personnel Name: <u>J</u>
Well ID: <u>HG.WC-117</u>	Pump Type/Model: <u>monsoon</u>	
Total Depth (ft) (after purge): <u>39.95</u>	Tubing Material: <u>poly</u>	
Depth to Water (ft): <u>16.44</u>	Pump Intake Depth (ft): <u>39</u>	
Well Diameter (in): <u>2</u>	Start/Stop Purge Time: <u>0909/1620</u>	
Well Volume (gal) = 0.041d ₂ h: <u>3.85</u>	Purge Rate (mL/min): <u>4000</u>	
Well Volume (L) = gal * 3.785: <u>14.57</u>	Total Purge Volume (L): <u>1860</u>	

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

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

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
0909	6.40	2.03	114.7	6.99	28.55	over range	16.93	4000	0	fine orange material on in place
0919	6.00	606.33	99.6	0.02	19.15	over range	17.00	4000	40 3785	pump & tubing
0929	5.91	559.50	86.5	0.01	19.02	over range	22.43	4000 4000	25000 90 liters	
0939	5.55	410.15	88.8	1.28	18.97	954	19.23	4000	127120	pump clog - pump tickle
0949	5.95	583.06	80.3	-0.01	18.75	over range	16.20	4000	164170	
0959	5.88	540.15	84.6	-0.01	18.77	634	20.07	4000	200210	
1009	5.92	545.36	82.6	-0.01	18.75	2016	22.30	4000	237200	pause surge/purge to
1019	5.95	575.18	86.0	-0.01	18.70	83	22.70	4000	274290	clean front DO probe
1029	5.91	672.45	84.8	0.98	18.87	1446	21.90	4000	311330	cycle well: heavy
1039	5.94	563.76	80.3	-0.01	18.70	893	22.30	4000	348370	
1051	6.00	575.03	53.1	0.06	19.82	69.7	24.30	4000	400410	pause recording, recal DO
1101	5.97	575.44	65.3	-0.01	18.69	76.5	23.70	4000	437450	meter.
										pause dev to front meter
										- continue pumping
										while adjusting DO meter
1115	6.02	572.45	51.0	0.23	19.46	40.3	22.15	4000	500	
1125	5.94	554.70	62.8	-0.01	18.74	786	22.90	4000	537510	cycle well: heavy
										sanitise well: heavy
1152	5.98	583.89	97.0	0	18.45	27.8	22.85	4000	660	sanitise well: heavy
										resume measurements
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

596
620
660

WELL DEVELOPMENT LOG SHEET

pg 2 of 3

Client: <u>SCS</u>	Project No: <u>GW6581</u>	Development Date: <u>6/15/21</u>
Site: <u>Plant Hammond</u>	Location: <u>AP-4</u>	Field Personnel Name: <u>[Signature]</u>
Well ID: <u>HGLX-117</u>	Pump Type/Model: <u>monsoon</u>	
Total Depth (ft) (after purge): <u>39.95</u>	Tubing Material: <u>pvc</u>	
Depth to Water (ft): <u>16.44</u>	Pump Intake Depth (ft): <u>38.5-39</u>	
Well Diameter (in): <u>2</u>	Start/Stop Purge Time: <u>6/09/1620</u>	
Well Volume (gal) = 0.041d ₂ h: <u>3.85</u>	Purge Rate (mL/min): <u>4000</u>	
Well Volume (L) = gal * 3.785: <u>14.57</u>	Total Purge Volume (L): <u>1860</u>	

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

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

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1202	5.94	557.42	89.1	0.01	18.75	12.1	22.15	4000	700	
1212	5.61	330.52	86.3	0.56	19.15	821	20.90	4000	740	agitate well
1222	5.66	342.56	87.9	2.10	18.97	1964	22.15	4000	780	cont. agitation
1232	5.97	572.23	80.9	0	18.79	768	21.80	4000	820	↓
1242	5.93	551.39	79.0	0	18.82	1165	23.52	4000	860	↓
1252	5.95	562.04	78.1	0	18.79	142	24.18	4500	905	↓
1302	5.95	561.67	90.4	0	18.84	907	22.60	4500	950	↓
						2062	32.00	6000	1100	
1320										pump failure, replace motor
1320	5.95	564.05	95.5	0	18.84	665	19.10	6000	1100	agitate well ↓
1330	5.84	493.64	81.8	0.48	18.83	2459	33.85	6000	1160	↓
1340	6.60	1.79	121.2	6.63	19.95	1081	37.36	6000	1220	↓
1350	5.83	491.75	94.5	1.63	18.73	116	32.80	4000	1260	pump malfunction (PVC shavings)
1400	5.85	510.45	101.1	0.62	18.72	20.6	33.54	4000	1300	agitate well ↓
1410	5.94	555.59	93.6	0.17	18.75	71.6	30.26	4000	1340	↓
1420	5.97	574.83	87.2	0.11	18.87	986	25.95	4000	1360	swap batteries ↓
1430	6.00	587.27	82.0	0.10	18.98	119	24.90	4000	1400	↓
1440	6.95	555.51	82.3	0.18	19.06	63	23.20	4000	1440	↓
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

Low flow Simulation



WELL DEVELOPMENT LOG SHEET

Client: <u>SCS</u>	Project No: <u>C06681</u>	Development Date: <u>6/16/20</u>
Site: <u>Plant Hammer</u>	Location: <u>A7-4</u>	Field Personnel Name: <u>J</u>
Well ID: <u>HGLOC-117</u>	Pump Type/Model: <u>MONSOON</u>	
Total Depth (ft) (after purge): <u>39.95</u>	Tubing Material: <u>poly</u>	
Depth to Water (ft): <u>16.50</u>	Pump Intake Depth (ft): <u>35'</u>	
Well Diameter (in): <u>2.14</u>	Start/Stop Purge Time: <u>0835</u>	
Well Volume (gal) = 0.041d ₂ h: <u>3.84</u>	Purge Rate (mL/min): <u>400</u>	
Well Volume (L) = gal * 3.785: <u>14.53</u>	Total Purge Volume (L): <u>35</u>	

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

Well Type: ~~Nash~~ ~~Stick Up~~

Well Lock: ~~Yes~~ ~~No~~

Well Cap Condition: ~~Good~~ ~~Replace~~

Well Tag Present: ~~Yes~~ ~~No~~

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
0835	5.64	409.69	122.1	1.01	20.21	30	16.50	250-200	0	
0840	5.72	403.72	117.9	1.89	21.02	30.4	16.50	200	1	water is slightly cloudy with visible muck/reflexive particulate
0845	5.58	401.92	140.6	0.68	20.26	32.7	16.50	400	3	pump unsustainable under 400
0850	5.59	411.63	135.0	0.51	20.30	25.5	16.50	400	5	
0855	5.59	414.30	131.6	0.41	20.39	20.5	16.50	400	7	
0900	5.61	415.96	100.9	0.36	20.48	17.5	16.50	400	9	reflective material no longer visible
1005 0905	5.64	428.81	124.0	0.29	20.35	14.5	16.50	400	11	
1010 0910	5.68	441.74	120.4	0.26	20.53	11.9	16.50	400	13	
1015 0915	5.69	441.71	118.2	0.26	20.49	11.3	16.50	400	15	
1020 0920	5.70	447.80	116.0	0.21	20.44	7.74	16.50	400	17	
1025 0925	5.73	458.75	114.2	0.19	20.39	6.80	16.50	400	19	
1030 0930	5.75	508.75	112.1	0.17	20.39	6.72	16.50	400	21	
1035 0935	5.77	474.60	108.6	0.18	20.75	5.48	16.50	400	23	
1040 0940	5.76	464.67	106.2	0.19	20.98	5.18	16.50	400	25	
1045 0945	5.75	464.89	103.3	0.20	21.49	4.91	16.50	400	27	(with low flow) sample here
1050 0950	5.71	445.39	103.2	0.22	20.93	4.34	16.50	400	29	newly turb. cell. fraction
1055 0955	5.73	462.26	102.6	0.18	20.93	4.04	16.50	400	31	
1100 1000	5.77	477.70	101.3	0.15	20.77	3.23	16.50	400	33	
1105 1005	5.78	413.59	81.5	0.13	20.50	3.08	16.50	400	35	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

33.5' tube + 12 m₁₀

pg 1 of 2

Geosyntec

WELL DEVELOPMENT LOG SHEET

Client: ES
 Site: Plant Hammond
 Well ID: 16W2-118
 Total Depth (ft) (after purge): 40.85
 Depth to Water (ft): 12.78
 Well Diameter (in): 2
 Well Volume (gal) = 0.041d₂h: 4.66
 Well Volume (L) = gal * 3.785: 17.47

Project No: GW6581
 Location: AP-4
 Pump Type/Model: monsoon
 Tubing Material: poly
 Pump Intake Depth (ft): 40'
 Start/Stop Purge Time: 1225 11740
 Purge Rate (mL/min): 2000
 Total Purge Volume (L): 642

Development Date: 8/16/21
 Field Personnel Name: D

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

Well Type: Flush Suck Up
 Well Lock: Yes No
 Well Cap Condition: Good Replace
 Well Tag Present: Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1228	6.80	511.66	34.0	0.47	23.22	0.2	12.95	200	1	pre purge for full flow cell
1235	6.91	541.53	43.8	0.33	18.75	0.2	38.70	7000	41	pump rate too high, lower
1245	6.95	541.38	47.5	0.54	18.92	3762	32.50	2000	61	lower purge rate to prevent
1245	6.93	545.03	45.8	1.01	18.88	851	31.40	2000	81	dry purge, smelt purge well
1257	6.94	550.40	45.2	1.04	18.88	851	31.40	2000	82	connection error resume @ 1257
1307	6.94	550.26	43.5	0.21	18.92	1345	31.45	2000	102	went. surge purge
1317	6.93	552.34	47.1	0.22	19.01	1263	31.4	2000	122	
1327	6.93	547.69	41.1	0.49	18.91	3593	30.87	2000	142	
1337	6.93	548.95	46.4	0.37	18.95	2098	30.46	2000	162	Spec. Cond = 548.69
1347	6.93	547.83	43.7	0.41	18.93	2806	30.60	2000	182	
1357	6.93	548.50	44.1	0.33	18.97	983	30.72	2000	202	Let pump @ 39' to see turb.
1400	6.93	554.21	37.9	0.69	18.97	953	30.72	2000	212	decrease + connection error
1410	6.93	549.80	34.6	0.63	18.97	58.9	30.60	2000	232	resume @ 1400, resume
1420	6.97	547.27	36.7	0.61	19.02	1951	31.30	2000	252	surge / purge @ 5 min intervals @
1430	6.94	552.82	36.1	0.22	18.83	1808	37.00	2000	272	1410, 30 sec purge to dry, return
1440	6.94	547.44	36.3	0.71	19.04	1012	31.30	2000	292	to normal
1450	6.93	544.00	36.5	0.43	18.98	930	31.45	2000	312	in 30 sec. pause to sub merge screen
1460	6.95	551.65	35.4	0.47	18.97	2472	29.10	2000	332	
1505	6.89	551.41	36.3	0.48	18.83	688	35.5	2000	352	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

WELL DEVELOPMENT LOG SHEET

pg 2 of 2

Client:	<u>SCS</u>	Project No.:	<u>GWCS81</u>	Development Date:	<u>5/16/21</u>
Site:	<u>Plant Hammond</u>	Location:	<u>AP-41</u>	Field Personnel Name:	<u>D</u>
Well ID:	<u>11GLX 118</u>	Pump Type/Model:	<u>monsoon</u>		
Total Depth (ft) (after purge):	<u>40.85</u>	Tubing Material:	<u>poly</u>		
Depth to Water (ft):	<u>17.78</u>	Pump Intake Depth (ft):	<u>40'</u>		
Well Diameter (in):	<u>2</u>	Start/Stop Purge Time:	<u>1225/1746</u>		
Well Volume (gal) = 0.041d ₂ h:	<u>460</u>	Purge Rate (mL/min):	<u>2600</u>		
Well Volume (L) = gal * 3.785:	<u>17.42</u>	Total Purge Volume (L):	<u>642</u>		

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

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

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1520	6.8998	554.41	36.3	2.48	18.63	85	29.03	2000	372	pause pump for 5 to reset pump
1530	6.94	558.08	36.2	1.27	18.27	32	29.00	2000	392	resume surge/purge
1540	6.94	549.65	44.0	1.14	18.88	30.73	29.65	2000	402	
1550	6.95	511.06	39.9	1.30	18.93	over range	29.25	2000	422	visible fine sediment
1600	6.95	494.29	42.6	0.77	18.91	35.21	29.35	2000	442	with red/orange particulate
1610	6.95	557.07	38.6	0.71	18.91	21.02	29.25	2000	462	in purge bucket
1620	6.94	545.99	43.7	1.26	18.88	23.43	29.85	2000	482	
1630	6.95	536.77	38.2	1.36	18.92	22.26	29.45	2000	502	
1640	6.94	551.20	37.8	0.63	18.83	27.70	29.45	2000	522	
1650	6.95	500.95	36.3	0.56	18.92	38.83	29.45	2000	542	
1700	6.94	504.68	36.4	1.15	18.97	over range	29.45	2000	562	pause surging ↓
1710	6.43	494.89	33.6	0.94	18.93	96	30.25	2000	582	↓
1720	6.94	551.78	29.7	0.21	18.88	37.6	30.42	2000	602	
1730	6.95	551.42	28.5	0.12	18.92	14.9	29.33	2000	622	stop surge/purge, surge
1740	6.95	555.27	33.2	0.27	18.89	23.78	29.99	2000	642	end purge, resume
										low flow
										may hold sediments on pump motor
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

Low Flow Test

pg 1 of 2



WELL DEVELOPMENT LOG SHEET

Client: SCS
 Site: Plant Hammond
 Well ID: Holox-118
 Total Depth (ft) (after purge): 40.85
 Depth to Water (ft): 12.92
 Well Diameter (in): 2
 Well Volume (gal) = 0.041d₂h: 4.50
 Well Volume (L) = gal * 3.785: 17.34

Project No: CLUG581
 Location: AP-4
 Pump Type/Model: mansson
 Tubing Material: Poly
 Pump Intake Depth (ft): 35'
 Start/Stop Purge Time: 1100
 Purge Rate (mL/min): 2000
 Total Purge Volume (L): 25

Development Date: 8/17/21
 Field Personnel Name: [Signature]

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

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

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1100	6.95	568.01	101.7	0.62	21.20	608	12.92	200	0	
1105	6.97	554.78	105.2	0.46	20.91	67	13.01	200	1	
1110	6.99	551.49	83.9	0.42	20.57	78	13.01	200	2	
1115	6.99	554.99	99.1	0.32	20.34	47	13.01	200	3	
1120	6.99	551.44	74.8	0.27	20.29	87.5	13.01	200	4	
1125	7.00	551.97	67.6	0.18	20.04	54.0	13.01	200	5	
1130	7.00	550.84	79.3	0.15	19.85	29.9	13.01	200	6	
1135	6.99	554.22	62.6	0.14	20.04	24.3	13.01	200	7	
1140	7.00	548.12	59.7	0.12	19.95	19.5	13.01	200	8	as water clears, sediment visible in lines
1145	6.99	548.66	69.3	0.10	20.06	13.5	13.02	200	9	
1150	6.99	549.40	56.4	0.10	19.64	12.5	13.02	200	10	
1155	6.99	551.70	65.2	0.09	19.64	10.83	13.02	200	11	
1200	6.99	549.71	53.6	0.08	19.68	20.7	13.02	200	12	
1205	6.99	549.36	51.5	0.07	19.68	9.85	13.02	200	13	
1210	6.98	552.83	59.7	0.07	19.57	8.39	13.02	200	14	
1215	6.99	548.56	49.4	0.06	19.59	7.18	13.02	200	15	
1220	6.98	550.63	48.8	0.06	19.71	6.11	13.02	200	16	
1225	6.99	551.80	55.1	0.06	20.13	5.68	13.02	200	17	
1230	6.99	547.23	55.0	0.06	20.28	5.14	13.02	200	18	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

33.60' tubing

WELL DEVELOPMENT LOG SHEET

Client:	<u>SCS</u>	Project No.:	<u>G.WCS81</u>	Development Date:	<u>6/17/21</u>
Site:	<u>Plant Hammond</u>	Location:	<u>AD-4</u>	Field Personnel Name:	<u>J</u>
Well ID:	<u>MGA-111</u>	Pump Type/Model:	<u>monsoon</u>		
Total Depth (ft) (after purge):	<u>43.22</u>	Tubing Material:	<u>2017</u>		
Depth to Water (ft):	<u>11.68</u>	Pump Intake Depth (ft):	<u>33'</u>		
Well Diameter (in):	<u>2</u>	Start/Stop Purge Time:	<u>1434/1715</u>		
Well Volume (gal) = 0.041d ₂ h:	<u>5.17</u>	Purge Rate (mL/min):	<u>3000</u>		
Well Volume (L) = gal * 3.785:	<u>19.57</u>	Total Purge Volume (L):	<u>510</u>		

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

Well Type: Flush Stick Up

Well Lock: Yes No

Well Cap Condition: Good Replace

Well Tag Present: Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1434	6.87	303.54	74.5	3.66	21.35	21.7	11.68	0	0	purge/surge well
1444	6.99	321.26	90.2	3.72	18.82	overrange	23.00	3000	30	
1454	7.15	345.08	68.0	3.33	18.92	3319	24.38	3000	60	
1504	7.23	363.94	66.6	3.46	18.94	overrange	24.55	3000	90	turbidity seems higher w/ m
1514	7.21	345.80	64.1	3.53	18.88	overrange	24.95	3000	120	depth, surge/purge bottom
1524	7.25	361.33	63.4	3.04	18.92	3133	24.85	3000	150	50% observed
1534	7.27	301.61	62.4	3.12	18.94	overrange	25.55	3000	180	pause purge/surge, 300 is
1544	7.25	364.57	61.9	3.04	19.00	719	25.88	3000	210	turbid if decrease
1554	7.25	396.65	61.8	3.08	18.97	0.2	25.90	3000	240	pump down -
1577	7.07	354.80	73.5	3.30	19.01	overrange	36.25	4000	350	pump fixed
1627	7.22	358.86	64.2	3.09	18.88	overrange	36.25	4000	390	purge/surge resumes
1637	7.34	373.73	60.2	2.77	18.92	3413	34.23	3000	420	sediment cleared pump
1645	7.77	364.41	61.0	2.96	18.47	overrange	33.54	3000	450	pump stuck @ 16:45
1705	7.21	325.43	60.7	3.04	18.95	overrange	34.65	3000	480	resume @ 16:45
1715	7.16	347.53	61.3	3.24	18.85	overrange	35.66	3000	510	end purge resume
										6/180
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

1645
(655)
164

Development log, low flow test

Geosyntec[®]
consultants

~~GROUNDWATER SAMPLING LOG SHEET~~

Client: SCS
 Site: Plant Hammer
 Well ID: HGWA-111
 Total Depth (ft): 43.22
 Depth to Water (ft): 10.45
 Well Diameter (in): 2
 Well Volume (gal) = 0.041d²h: 5.37
 Well Volume (L) = gal * 3.785: 20.34

Project No.: G-W6381
 Location: AD-4
 Pump Type/Model: maivson
 Tubing Material: poly
 Pump Intake Depth (ft): 38
 Start/Stop Purge Time: 0917 / 1047
 Purge Rate (mL/min): 400
 Total Purge Volume (L): 36

Development Sampling Date: 2/18/21
 Sampler's Name: BJ
~~Sample Collection Time:~~
~~Sample Purge Rate (mL/min):~~
~~Sample ID:~~
~~Laboratory Analyses:~~
~~QA/QC Collected?~~
~~QA/QC Lab:~~

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

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

Purge Method: ~~Low-Flow~~ ~~Well Volume~~ ~~Other:~~
 Sampling Method: Pump Discharge ~~Other:~~

All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
0917	7.20	337.99	166.9	4.06	20.76	82	12.40	250 200	2	pre-purge to fill flow cell
0922	7.21	336.06	158.9	3.92	20.64	56	12.46	200	3	
0927	7.23	341.29	170.7	3.78	20.87	92	12.46	200	4	
0932	7.25	345.02	143.1	3.65	21.12	63.9	12.46	200	5	purge unstable, increase flow
0937	7.27	344.81	156.5	3.97	22.27	62.4	12.60	400	7	
0942	7.28	346.87	129.6	3.65	20.62	63.0	12.73	400	9	
0947	7.30	352.93	146.1	3.51	20.75	94.2	12.75	400	10	
0952	7.32	354.32	118.1	3.38	21.05	28.1	12.75	400	14	
0957	7.34	357.88	134.9	3.30	20.94	23.2	12.65	400	16	
1002	7.35	356.50	130.1	3.22	20.97	17.8	12.65	400	18	
1007	7.34	357.71	125.1	3.22	20.95	18.1	12.65	400	20	
1012	7.35	359.28	98.6	3.16	21.02	12.3	12.65	400	22	
1017	7.36	360.36	114.8	3.08	21.15	7.41	12.70	400	24	temp = 21.15 > 1.15
1022	7.36	357.27	89.8	3.09	21.02	6.62	12.70	400	26	
1027	7.35	358.62	105.7	3.05	20.93	4.97	12.70	400	28	
1032	7.35	353.98	82.9	3.07	21.15	4.13	12.80	400	28 30	
1037	7.36	357.70	79.1	3.03	20.98	2.73	12.80	400	32	
1042	7.36	358.99	93.8	3.00	20.84	2.60	12.80	400	34	
1047	7.37	356.16	74.2	3.00	20.84	2.35	12.80	400	36	end purge, turbidity below 5 NTU
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs	< 0.5 ft	> 100 mL < 250 mL	> 3L	

Well Development

Geosyntec[®]
consultants

GROUNDWATER SAMPLING LOG SHEET

Client: JCS
 Site: Plant Hammond
 Well ID: HGWT-1B
 Total Depth (ft): 3650
 Depth to Water (ft): 9.02
 Well Diameter (in): 2
 Well Volume (gal) = 0.041d²h: 4.50
 Well Volume (L) = gal * 3.785: 17.05

Project No.: GWGS81
 Location: AP-4
 Pump Type/Model: MONSOON
 Tubing Material: Poly
 Pump Intake Depth (ft): 36'
 Start/Stop Purge Time: 1025/1034
 Purge Rate (mL/min): ~2600
 Total Purge Volume (L): 40

Development
 Sampling Date: 6/18/21

Sampler's Name: DJ

~~Sample Collection Time:~~

~~Sample Purge Rate (mL/min):~~

~~Sample ID:~~

~~Laboratory Analyses:~~

~~Purge Method: Low-Flow Well Volume Other:~~

Sampling Method: Pump Discharge ~~Other:~~

~~QA/QC Collected?~~

~~QA/QC ID:~~

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

Well Type: Flush Stick Up

Well Lock: Yes No

Well Cap Condition: Good Replace

Well Tag Present: Yes No

All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1025	6.28	115.65	63.8	6.04	23.90	average	9.02	3000	0	
1034	6.19	123.47	86.7	7.06	19.48	average	32.30	2000	40	cond energy, purge dry
1130						average				purge dry
1230						average				purge dry
<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; margin: auto; display: flex; align-items: center; justify-content: center;"> D </div>										
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs	< 0.3 ft	> 100 mL < 250 mL	> 3L	

well does not keep up with pump recharge (~74 mL/min) too slow to draw up sufficient flow conditions

GROUNDWATER SAMPLING LOG SHEET

Client: <u>SCS</u>	Project No.: <u>G606581</u>	Sampling Date: <u>8/23/2021</u>
Site: <u>Plant Hammond</u>	Location: <u>AP-4</u>	Sampler's Name: <u>[Signature]</u>
Well ID: <u>HGWC-117</u>	Pump Type/Model: <u>Peri</u>	Sample Collection Time: <u>1236</u>
Total Depth (ft): <u>40.62</u>	Tubing Material: <u>poly</u>	Sample Purge Rate (mL/min): <u>200</u>
Depth to Water (ft): <u>15.40</u>	Pump Intake Depth (ft): <u>35'</u>	Sample ID: <u>HGWC-117</u>
Well Diameter (in): <u>2</u>	Start/Stop Purge Time: <u>1124 1124/1231</u>	Laboratory Analyses: <u>APP111-1V</u>
Well Volume (gal) = 0.041d ² h: <u>4.13</u>	Purge Rate (mL/min): <u>200</u>	
Well Volume (L) = gal * 3.785: <u>15.655</u>	Total Purge Volume (L): <u>15.5</u>	
<i>d = well diameter (inches); h = length of water column (feet)</i>		
Well Type: Flush <input type="checkbox"/> <u>Stick Up</u>	Purge Method: <u>Low-Flow Well Volume</u> Other: _____	QA/QC Collected? <input type="checkbox"/>
Well Lock: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Sampling Method: <u>Pump Discharge</u> Other: _____	QA/QC I.D. <input type="checkbox"/>
Well Cap Condition: Good <input checked="" type="checkbox"/> Replace <input type="checkbox"/>	All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No	
Well Tag Present: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

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.)
1124	5.22	245.90	122.5	2.21	20.29	2.16	15.40	200	2 2	water clear, no odor
1126	5.30	273.39	167.4	1.96	20.28	2.16	15.40	200	2.5	
1131	5.43	337.75	149.7	1.30	20.38	2.66	15.40	200	3.5	
1136	5.51	373.76	163.8	0.78	20.40	2.93	15.40	200	4.5	
1141	5.52	363.31	166.5	0.63	20.65	2.46	15.40	200	5.5	
1146	5.53	367.49	247.4	0.61	20.68	2.16	15.40	200	6.5 6.5	
1151	5.55	396.53	188.9	0.49	20.65	2.38	15.40	200	7.5	
1156	5.56	404.4	254.8	0.38	20.70	1.50	15.40	200	8.5 8.5	
1201	5.58	410.32	253.5	0.34	20.65	1.64	15.40	200	9.5	
1206	5.59	407.37	238.6	0.43	20.69	1.91	15.40	200	10.5	
1211	5.63	433.00	236.6	0.26	20.78	1.32	15.40	200	11.5	
1216	5.66	437.20	233.6	0.31	20.74	1.16	15.40	200	12.5	
1221	5.69	440.45	227.2	0.28	20.87	1.5	15.40	200	13.5	
1226	5.70	446.40	218.6	0.32	20.83	0.91	15.40	200	14.5	
1231	5.72	451.84	147.5	0.36	20.83	0.95	15.40	200	15.5	
1236										grab sample
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs	< 0.3 ft	> 100 mL < 250 mL	> 3L	

~~pg 2 of 2~~



GROUNDWATER SAMPLING LOG SHEET

Client: <u>SCS</u>	Project No.: <u>GWX581</u>	Sampling Date: _____
Site: <u>Plant Hammond</u>	Location: <u>AP-4</u>	Sampler's Name: _____
Well ID: <u>16.WA-113</u>	Pump Type/Model: <u>Per</u>	Sample Collection Time: _____
Total Depth (ft): <u>36.53</u>	Tubing Material: <u>poly</u>	Sample Purge Rate (mL/min): <u>100</u>
Depth to Water (ft): <u>6.34</u>	Pump Intake Depth (ft): <u>31.64 - 31.53</u>	Sample ID: _____
Well Diameter (in): <u>2</u>	Start/Stop Purge Time: <u>1431 / 1705</u>	Laboratory Analyses: _____
Well Volume (gal) = 0.041d ² h: <u>4.95</u>	Purge Rate (mL/min): <u>100</u>	
Well Volume (L) = gal * 3.785: <u>18.73</u>	Total Purge Volume (L): <u>6.5</u>	

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

Well Type: Flush Stick Up

Well Lock: Yes No

Well Cap Condition: Good Replace

Well Tag Present: Yes No

Purge Method: Low-Flow Well Volume Other: _____ QA/QC Collected? _____

Sampling Method: Pump Discharge Other: _____ QA/QC I.D. _____

All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1431	6.09	125.60	121.7	5.61	23.01	11.31	7.37	100	1	pre-purge 10 min to establish flow/setup
1433	6.09	126.94	92.8	5.50	23.09	13.87	8.20	100	1.5	comm error
1435	6.08	123.67	84.0	5.43	23.18	13.87	8.20	100	1.5	comm error
1440	6.08	126.42	79.3	5.51	22.74	13.57	8.50	100	2.0	
1445	6.09	127.92	75.4	5.35	22.94	14.00	9.35	100	2.5	
1450	6.08	128.51	76.8	5.30	22.92	10.20	9.50	100	3	
1500 1455	6.08	129.61	76.6	5.31	22.60	9.31	10.40	100	3.5	
1500	6.10	129.65	76.1	5.28	22.70	9.34	10.92	100	4.0	
1503	6.08	130.27	101.1	5.25	22.97	8.99	11.26	100	4.5	
1510						8.61	11.84	100	5	
1515						8.46	12.37	100	5.5	Sped over heat, resume readings when cool
1516 1520	6.10	138.53	54.3	5.14	22.81	7.98	12.70	100	6.0	
1525	6.10	136.51	71.4	5.08	23.01	7.58	12.95	100	6.5	
1530	6.11	136.28	71.7	5.05	22.89	7.52	13.29	100	7.0	
1535	6.08	135.28	72.0	4.97	23.24	7.46	13.51	100	7.5	
1540	6.09	136.29	72.4	5.06	23.28	7.20	13.80	100	8.00	
1545	6.09	136.40	71.5	4.46	23.15	7.28	14.00	100	8.5	
1550	6.10	139.26	71.4	5.17	23.70	7.22	14.25	100	9	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs	< 0.3 ft	> 100 mL < 250 mL	> 3L	

CALIBRATION REPORTS

July 2020

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 7/21/2026

Time (start): 1340

Time (finish): 1415

Smart TROLL SN: 613229

Turbidity Meter Type: LaMotte 2020we

SN: 2283-2612

Weather Conditions: 90°F sunny

Facility and Unit: Hammond

Project No: GW65818

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	24.6	4418 4490	4418	4436	+/- 5%	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.39	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340287 8/2021	27.1	7	7.22	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 8/2021	27.1	10	10.08	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19400167 8/2021	30	228	191	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	96.4	96.4	+/- 6% saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.57	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			-	-	-	+/- 0.5 NTU	Yes No	no standard
Turbidity 10 NTU			10	10.03	10.03	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

August 2020

EQUIPMENT CALIBRATION LOG

Field Technician: A. Reeder

Date: 08/25/2020

Time (start): 0715

Time (finish): 0745

smarTroll SN: 597519

Turbidity Meter Type: Lamotte 2030v2

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	4440	+/- 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	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler Date: 8/25/20 Time (start): 7:30 Time (finish): 0815
 SmartTroll SN: 643819 Turbidity Meter Type: LaMotte 2020w SN: 2009-1916
 Weather Conditions: 75°F, overcast Facility and Unit: Plant 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 8/20/21	24.4	4.49 4490 µS/cm	4444	4474	+/- 5 %	Yes No	
pH (4)			4.00	4.35	4.0	+/- 0.1 SU	Yes No	
pH (7)	14340057 8/20/21	24.8	7.00	7.29	7.0	+/- 0.1 SU	Yes No	
pH (10)	14320102 8/21	24.7	10.00	10.14	10.21	+/- 0.1 SU	Yes No	
ORP (mV)	14460167 8/21	24.9	+228 mV	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	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Reeder

Date: 8-26-2020

Time (start): 0810

Time (finish): 0900

smarTroll SN: 547519

Turbidity Meter Type: Lamotte 2020v2
2279

SN: 2279

Weather Conditions: C1067

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 08/21	24.2	4490	4398	4490	+/- 5 %	<input checked="" type="checkbox"/> Yes No	
pH (4)			4.0	4.56	4.0	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (7)	08/2021 19340057	24.3	7.0	7.53	7.0	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	08/2021 19320102	24.4	10.0	10.37	10.0	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	08/2021 19460167	24.6	+228	215	228	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	94.6%	100%	+/- 6 % saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1	1.25	1.0	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10	9.58	10.00	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 8/26/20

Time (start): 11:15

Time (finish): 11:50

SmartTroll SN: 643819

Turbidity Meter Type: Lamotte

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)	20010025 08/2021	25.2	4490	440	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4.00	4.40	4.40 4.39	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340097 19340057 8/21	25.8	7.0	7.29	7.30	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 8/21	26.0	10.00	10.19	10.26	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	R460167	26.1	+228	201.2	203.7	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	97.5	98.2	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.47	0.47	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	3.33	3.78	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	9.39	10.25	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

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	24.1	4490	4447	4418	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	8/21		4.0	4.60	4.60 4.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	14340057 8/21	24.8	7.0	7.52	7.52 7.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	14320102 8/21	25.1	10.0	10.35	10.41 10.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	14460167 8/21	25.1	228	148.8	189.2	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	83.9	100.1	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	1.81	1.31	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			0	7.78	10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 8/27/2020 Time (start): 0830 Time (finish): 0845
 smartTroll SN: 643819 Turbidity Meter Type: LAMotte 2020we SN: 7009-1416
 Weather Conditions: 75° 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)	26070025 8/2021	25.8	4440	4413	4404	+/- 5 %	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH (4)			4	4.39	4	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH (7)	19340057 8/2021	25.9	7	7.27	7	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH (10)	11320102 8/2021	26.1	10	10.2	10	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
ORP (mV)	19460167 8/2021	26.1	228	201.6	228	+/- 20mV	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	93.1	95.6	+/- 6 % saturation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Turbidity 0 NTU			0	0.5	0.5	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Turbidity 1 NTU			1	1.41	1.41	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Turbidity 10 NTU			10	10.43	10.43	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

September 2020

EQUIPMENT CALIBRATION LOG

Field Technician: Therese Vassler

Date: 9/18/20

Time (start): 0719

Time (finish): 0800

smarTroll SN: 646773

Turbidity Meter Type: Limetech zero

SN: 70009

Weather Conditions: Sunny 70°

Facility and Unit: Hummond

Project No.: 6W6584

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	22.0	4490	4386	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/21		4.0	4.80	4.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	14340057 08/21	22.3	7.00	7.63	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	14320102 08/21	22.4	10.00	10.44	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	1446167 08/21	22.5	228	143.4	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	96.1	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	0.56	0.88	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	15.00	10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: ASHISH TADKOR Date: 9-18-20 Time (start): 07 25 Time (finish): 07 42
 smarTroll SN: 512 733 Turbidity Meter Type: LAMOTTE 2020WE SN: 2949-0413
 Weather Conditions: 70°F, OVERCAST Facility and Unit: HAMMOND Project No: 6W0381

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)	20010625 08/2021	21.1	4490	4382	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.26	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 08/2021	21.9	7	7.08	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/2021	22.2	10	10.02	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 08/21	22.3	228	223	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	91.3	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.00	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	1.00	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.09	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 9/18/2020 Time (start): 0755 Time (finish): 0820
 smartroll SN: 597519 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)	20016025 8/2021	22.9	4490	4413	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.30	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	193410057 8/2021	23.1	7	7.11	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320162 8/2020	23.3	10	9.88	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	1946067 8/2021	23.3	228	205	230.3	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	90.9	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	1.4	1.4	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	12.52	10.11	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 9/22/20

Time (start): 0845

Time (finish): 0915

smarTroll SN: 646773

Turbidity Meter Type: Lemnaffe 2020

SN: 7009

Weather Conditions: Sunny 52°

Facility and Unit: Hammond

Project No.: CW6581

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	7440	4375	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)	08/21		4.00	4.95	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	14340057 05/27	14.4	7.00	7.60	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	14370007 08/21	14.9	10.0	10.30	10.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	14460167 08/24	15.0	228 228	205	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	92	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	.56	1	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	6	10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 9/22/2020

Time (start): 0920

Time (finish): 0150

smarTroll SN: 597519

Turbidity Meter Type: Lamotte 2026uc

SN: 1510-4111

Weather Conditions: 60°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)	26010025	19.2	4490	4264	4490	+/- 5%	<input checked="" type="checkbox"/> Yes No	
pH (4)	8/20/21		4	4.44	4	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (7)	19340057 8/20/21	18.4	7	7.13	7	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	19320102 8/20/21	18.3	10	9.85	10	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	19466167 8/20/21	18.2	228	256.9	232.7	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	91.4	100.6	+/- 6% saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1	0.88	0.88	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10	8.98	10.15	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: VISHISH TAURKAR

Date: 9-22-20

Time (start): 09 15

Time (finish): 09 35

SmartTroll SN: 512 733

Turbidity Meter Type: LAOTTE 2020N6

SN: 2949-0413

Weather Conditions: 55°F, SUNNY

Facility and Unit: HAMMOND

Project No.: CW0781

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)	20 010025 8/21	17.0	4490	4276	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.37	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	193 40057 8/21	17.1	7	7.12	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	193 28102 8/21	17.2	10	9.96	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 8/21	17.3	228	223.5	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	90.9%	100%	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.01	0.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	1.01	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	9.78	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler Date: 9/24/20 Time (start): 0720 Time (finish): 0800
 smarTroll SN: 646775 Turbidity Meter Type: Lanette 2020we SN: 7009
 Weather Conditions: Raining 58° Facility and Unit: Hammond Project No: 626581

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	17.9	4490	4385	4490	+/- 5%	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/21		4.0	4.94	4.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	10840037 08/21	18.7	7.0	7.63	7.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	14320102 08/21	18.9	10.0	10.37	10.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 08/21	14.0	228	197.2	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100%	94.0%	100%	+/- 6% saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	2.00	0.041	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	0.28	1.08	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	14.02	9.71	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 9/24/2020 Time (start): 0920 Time (finish): 0900
 smarTroll SN: 597519 Turbidity Meter Type: LaMotte 2000we SN: 1510-4111
 Weather Conditions: 60°F raining Facility and Unit: Hammond Project No.: CW6581

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 8/2021	20.5	4490	4400	4490	+/- 5%	<input checked="" type="checkbox"/> Yes No	
pH (4)			4	4.5	4	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (7)	19340057 8/2021	20.5	7	6.92	7	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	19320102 8/2021	20.8	10	9.71	10	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	19406167 8/2021	21	228	207	234.8	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	89.1	180	+/- 6% saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1	1.32	1.32	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10	10.71	10.34	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH TAVKAR Date: 9-24-2020 Time (start): 0745 Time (finish): 0815
 smarTroll SN: 512733 Turbidity Meter Type: LAQUETTE 2020W2 SN: 2949-0413
 Weather Conditions: 60°F, RAINY Facility and Unit: HANMANN Project No: GW0591

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	17.5	4490	4450	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.36	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 8/21	18.3	7	7.16	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 8/21	18.6	10	9.99	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 8/21	19.4	228	193.9	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	93.0	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.02	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	1.23	1	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.27	10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: WASHISH TAJROOR Date: 9-25-20 Time (start): 09 00 Time (finish): 09 20
 smarTroll SN: 512733 Turbidity Meter Type: LAMOTTE 2000UE SN: 2940-643
 Weather Conditions: 68°F, RAINY 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)	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)	10340057 8/21	19.3	7	7.10	7.00	+/- 0.1 SU	Yes No	
pH (10)	19320102 8/21	19.4	10	9.97	10.00	+/- 0.1 SU	Yes No	
ORP (mV)	1960167 8/21		228	207.6	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	94.1	100	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0.00	0.00	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1	1.26	1.00	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10	9.77	10.00	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 9/25/20

Time (start): 0900

Time (finish): 0930

smarTroll SN: 646775

Turbidity Meter Type: Lamotte 2020

SN: 7009

Weather Conditions: Rainy, 68°

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)	20010625 08/21	18.9	4440	4304	4440 4492	+/- 5%	<input checked="" type="radio"/> Yes No	
pH (4)			4.0	4.92	4.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340054 08/21	19.2	7.0	7.59	7.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/21	19.4	10.00	10.39	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 08/21	19.7	228	197.0	228 228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	93.1	100	+/- 6% saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.42	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	0.44	1.04	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	9.82	10.39	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

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.: GW6981

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	21.0	4490	4364	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	8/2021		4	4.51	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 8/1/2021	21.0	7	6.86	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	14320362 8/2021	21.2	10	8.55	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19400167 8/2021	21.3	228	243.5	235.3	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100 100	90.3	100.3	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	1.08	1.08	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	7.62	10.06	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler Date: 9/28/20 Time (start): 0815 Time (finish): 0848
 smarTroll SN: 646775 Turbidity Meter Type: Lanott 2020w SN: 7009
 Weather Conditions: Sunny 68° Facility and Unit: hammer Project No: 610658

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	22.1	4490	4448	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/21		4.00	4.87	4.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340054 08/21	22.8	7.00	7.58	7.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320002 08/21	23.1	10.00	10.42	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	1946067 08/21	23.3	228	189.2	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	95.9	99.8	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.01	0.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	1.29	1.28	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	6.73	9.85	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Becker Date: 9-28-2020 Time (start): 1330 Time (finish): 1405
 smarTroll SN: 512733 Turbidity Meter Type: Lemotte SN: 2949
 Weather Conditions: Sunny H: 82/L: 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	4391	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)			100%	97.7	100%	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	0.99	1.00	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10	10	10	+/- 0.5 NTU	Yes No	

November 2020

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: 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 /	25°	4490 4.60	5042 3.80	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	Aquatroll 400 ↓
pH (4)	08/21		4.00	3.81	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 08/21	20.61°	7.00	7.12	7.02 7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/21	20.66°	10	10.15	10.04 10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 08/21	20.79	228	226.8	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	99.93%	100%	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.54	0.38	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1.00	1.00	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10.00	7.67	9.93	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

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	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	2010025	22.29	4490	4568.3	4322.9	+/- 5%	<input checked="" type="radio"/> No	
pH (4)	08/2021		4.00	4.03	4.00	+/- 0.1 SU	<input checked="" type="radio"/> No	
pH (7)	19340057 08/2021	22.04	7.00	7.5	7.00	+/- 0.1 SU	<input checked="" type="radio"/> No	
pH (10)	19329102 08/2021	22.04	10.00	9.97	10.00	+/- 0.1 SU	<input checked="" type="radio"/> No	
ORP (mV)	19460167 08/2021	22.14	228	240.7	227.6	+/- 20mV	<input checked="" type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	101.31	99.83	+/- 6% saturation	<input checked="" type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> No	
Turbidity 1 NTU			1	0.92	0.97	+/- 0.5 NTU	<input checked="" type="radio"/> No	
Turbidity 10 NTU			10	11.18	9.85	+/- 0.5 NTU	<input checked="" type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shawla Lin Date: 11/11/2020 Time (start): 7:30 Time (finish): 7:45
 smarTroll SN: 728634 Turbidity Meter Type: LaMotte 2020w 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	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025	22.84	4490	4574.0	4508.1	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)	08/2021		4.00	4.51	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 08/2021	22.61	7.00	6.99	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/2021	22.52	10.00	10.01	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 08/2021	22.36	228	226.9	228.0	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	98.59	99.95	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	0.98	0.99	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.99	10.03	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kussler Date: 11/11/20 Time (start): 745 Time (finish): 0815
 smarTroll SN: 728550 Turbidity Meter Type: Lanotte 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	20.67	4490	4495.4	4490	+/- 5%	<input checked="" type="radio"/> Yes No	
pH (4)	08/21		4.0	4.15	4.00 ^{4.00}	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	1934657 08/21 12180	20.90	7.0	7.07	7.02 ^{7.02}	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	1932902 08/21	21.03	10.0	10.68	10.04	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	1946167	21.14	228	229.9	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	99.15%	100%	+/- 6% saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.79	0.01	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1.00	0.52	0.78	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10.00	10.91	10.68	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

December 2020

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin Date: 12/15/2020 Time (start): 8:30 Time (finish): 8:55
 smarTroll SN: 728648 Turbidity Meter Type: LaMotte 2020/ve SN: 1R59-0412
 Weather Conditions: Sunny 132°F 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 08/2021	8.35	4490	4774.8	4469.6	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4.000	4.00	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	#1934037 08/2021	8.48	7.00	7.00 7.11	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	#19320102 08/2021	8.35	10.00	10.26	10.10	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	#19460167 08/2021	8.21	228	247.3	227.9	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt. 100% water saturated air cal)			100	99.87	100.54	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	0.87	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.27	9.98	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

January 2021

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728634
Created 1/19/2021

Sensor	RDO
Serial Number	728749
Last Calibrated	1/19/2021

Calibration Details

Slope 1.080667
Offset 0.00 mg/L

Calibration point 100%

Concentration 10.62 mg/L
Temperature 9.08 °C
Barometric Pressure 1,007.7 mbar

Sensor	Conductivity
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Serial Number	728634
Last Calibrated	1/19/2021

Calibration Details

Cell Constant 0.997
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor	Level
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Serial Number	728331
Last Calibrated	Factory Defaults

Sensor	pH/ORP
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Serial Number	20797
Last Calibrated	1/19/2021

Calibration Details

Total Calibration Points 3

Calibration Point 1

pH of Buffer 4.00 pH
pH mV 165.3 mV
Temperature 9.33 °C

Calibration Point 2

pH of Buffer 7.06 pH
pH mV -3.6 mV
Temperature 9.31 °C

Calibration Point 3

pH of Buffer 10.12 pH
pH mV -171.6 mV
Temperature 9.22 °C

Slope and Offset 1

Slope -55.21 mV/pH
Offset -0.3 mV

Slope and Offset 2

Slope -54.89 mV/pH
Offset -0.3 mV

ORP

ORP Solution ZoBell's
Offset -1.2 mV
Temperature 8.94 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728638
Created 1/19/2021

Sensor	RDO
Serial Number	728789
Last Calibrated	1/19/2021

Calibration Details

Slope 1.095512
Offset 0.00 mg/L

Calibration point 100%

Concentration 10.42 mg/L
Temperature 9.32 °C
Barometric Pressure 1,008.6 mbar

Sensor	Conductivity
Serial Number	728638
Last Calibrated	1/19/2021

Calibration Details

Cell Constant 0.001
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor	Level
Serial Number	726660
Last Calibrated	Factory Defaults

Sensor	pH/ORP
Serial Number	20790
Last Calibrated	1/19/2021

Calibration Details

Total Calibration Points 3

Calibration Point 1

pH of Buffer 4.00 pH
pH mV 143.4 mV
Temperature 11.47 °C

Calibration Point 2

pH of Buffer 7.06 pH
pH mV -25.3 mV
Temperature 11.11 °C

Calibration Point 3

pH of Buffer	10.12 pH
pH mV	-191.0 mV
Temperature	10.82 °C

Slope and Offset 1

Slope	-55.13 mV/pH
Offset	-22.0 mV

Slope and Offset 2

Slope	-54.14 mV/pH
Offset	-22.1 mV

ORP

ORP Solution	ORP Standard
Offset	-6.1 mV
Temperature	8.70 °C

Calibration Report

Instrument Aqua TROLL 400
 Serial Number 728638
 Created 1/19/2021

Sensor	RDO
Serial Number	728789
Last Calibrated	1/19/2021

Calibration Details

Slope 1.095512
 Offset 0.00 mg/L

Calibration point 100%

Concentration 10.42 mg/L
 Temperature 9.32 °C
 Barometric Pressure 1,008.6 mbar

Sensor	Conductivity
Serial Number	728638
Last Calibrated	1/19/2021

Calibration Details

Cell Constant 0.001
 Reference Temperature 25.00 °C
 TDS Conversion Factor (ppm) 0.65

Sensor	Level
Serial Number	726660
Last Calibrated	Factory Defaults

Sensor	pH/ORP
Serial Number	20790
Last Calibrated	1/19/2021

Calibration Details

Total Calibration Points 3

Calibration Point 1

pH of Buffer 4.00 pH
 pH mV 147.4 mV
 Temperature 10.00 °C

Calibration Point 2

pH of Buffer 7.06 pH
 pH mV -22.7 mV
 Temperature 9.51 °C

Calibration Point 3

pH of Buffer 10.12 pH
pH mV -190.3 mV
Temperature 9.06 °C

Slope and Offset 1

Slope -55.59 mV/pH
Offset -19.4 mV

Slope and Offset 2

Slope -54.75 mV/pH
Offset -19.4 mV

ORP

ORP Solution ORP Standard
Offset -6.1 mV
Temperature 8.70 °C

March 2021

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH TRIVEDI

Date: 3-10-2024

Time (start): 07:40

Time (finish): 07:49

SmartTroll SN: 728563

Turbidity Meter Type: LaMotte 2020we

SN: 710-0711

Weather Conditions: Cloudy, 40°F

Facility and Unit: Plant Hammond AP-1/2

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)	20610025 08/24	21.06	4490	4366.2	4490	+/- 5 %	Yes No	
pH (4)			4.00	3.93	4.00	+/- 0.1 SU	Yes No	
Mid-Day pH (4) check			4.00			+/- 0.1 SU	Yes No	
pH (7)	19340057 08/24	19.38	7.00	6.92	7.00	+/- 0.1 SU	Yes No	
Mid-Day pH (7) check				7.00			+/- 0.1 SU	Yes No
pH (10)	19320102 08/24	18.70	10.00	9.88	10.00	+/- 0.1 SU	Yes No	
Mid-Day pH (10) check				10.00			+/- 0.1 SU	Yes No
ORP (mV)	19400167 08/24	18.74	228	238.0	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	95.71	100	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0.00	0.00	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	0.96	1.00	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00	10.39	10.00	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler Date: 3/11/21 Time (start): 0740 Time (finish): 0810
 smarTroll SN: 728566 Turbidity Meter Type: LaMotte 2020we SN: 2289-2612
 Weather Conditions: Sunny, 70° Facility and Unit: Plant Hammond AP-1/2 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)	20016025 08/21	15	4490	4332.5	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	3.98	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check			4.00	3.98 ⁺¹⁰ 4.09	/	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	within range
pH (7)	19340057	15	7.00	7.04	7.04	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check			7.00	6.98	/	+/- 0.1 SU	Yes <input type="radio"/> No	within Range
pH (10)	1932902 08/21	15	10.00	10.17	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check			10.00	9.92	/	+/- 0.1 SU	Yes <input type="radio"/> No	within Range
ORP (mV)	1446067 08/21	15	228	237.6	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	93.07	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.19	0.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	0.43	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	10.45	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/11/2021

Time (start): 0730

Time (finish): 0755

smarTroll SN: 728550

Turbidity Meter Type: LaMotte 2020we

SN: 644-1416

Weather Conditions: 45°F Clear

Facility and Unit: Plant Hammond AP-1/2

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	14.99	4490	4582.2	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	4.03	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	19340057 8/2021	15.69	4.00	7.03	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	20010025 8/2021	25.97	7.00	4.05	4.05	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	19340057 8/2021	26.07	7.00	6.95	6.95	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/2021	15.96	10.00	10.04	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check	19320102 8/2021	25.6	10.00	9.95	9.95	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	16.07	228	231.4	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	92.09	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	0.58	0.58	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	10.68	9.75	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH TAJKOR

Date: 3-11-2021

Time (start): 08 04

Time (finish): 08 19

smarTroll SN: 728563

Turbidity Meter Type: LaMotte 2020we

SN: 710-0711

Weather Conditions: SUNNY, 49°F

Facility and Unit: Plant Hammond AP-1/2

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)	20610025	14.88	4490	4437	4420	+/- 5 %	Yes No	
pH (4)	08/2021		4.00	4.01	4.00	+/- 0.1 SU	Yes No	
Mid-Day pH (4) check	"	24.19	4.00	4.05	4.00	+/- 0.1 SU	Yes No	
pH (7)	19340057 08/2021	15.50	7.00	6.88	7.00	+/- 0.1 SU	Yes No	
Mid-Day pH (7) check	"	23.10	7.00	7.03	7.00	+/- 0.1 SU	Yes No	
pH (10)	19320102 08/2021	15.31	10.00	10.06	10.00	+/- 0.1 SU	Yes No	
Mid-Day pH (10) check	"	21.96	10.00	9.98	10.00	+/- 0.1 SU	Yes No	
ORP (mV)	19460167 08/2021	14.94	228	240.8	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	91.19	100	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0.00	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	1.17	1.00	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00	10.45	10.00	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/12/2021

Time (start): 0835

Time (finish): 0855

SmartTroll SN: 228550

Turbidity Meter Type: LaMotte 2020we

SN: 6411-1116

Weather Conditions: 50°F partly cloudy

Facility and Unit: Plant Hammond AP-1/2

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	19.51	4490	4520	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	4.02	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check	20010025 8/2021	25.4	4.00	3.96	3.96	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 8/2021	19.55	7.00	6.95	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	19340057 8/2021	24.87	7.00	7.02	7.02	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/2021	19.49	10.00	9.98	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check	19320102 8/2021	25.18	10.00	10.04	10.04	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	19.29	228	222.3	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	99.82	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	1.03	1.03	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	9.62	9.62	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 3/12/21

Time (start): 0715

Time (finish): 0900

SmartTroll SN: 728566

Turbidity Meter Type: LaMotte 2020wv

SN: 12889262

Weather Conditions: Sunny, 70°

Facility and Unit: Plant Hammond AP-1/2

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)	<u>20016028</u>	<u>13.18</u>	4490	<u>4471.9</u>	<u>4490</u>	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)	<u>08/21</u>		4.00	<u>4.05</u>	<u>4.00</u>	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
Mid-Day pH (4) check	<u>/</u>	<u>/</u>	4.00	<u>4.07</u>	<u>/</u>	+/- 0.1 SU	Yes No	<u>within Range</u>
pH (7)	<u>08/21</u> <u>10340057</u>	<u>13.10</u>	7.00	<u>6.99</u>	<u>7.00</u>	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
Mid-Day pH (7) check	<u>/</u>	<u>/</u>	7.00	<u>7.02</u>	<u>/</u>	+/- 0.1 SU	Yes No	<u>within Range</u>
pH (10)	<u>1032902</u> <u>08/21</u>	<u>13.09</u>	10.00	<u>9.98</u>	<u>10.00</u>	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
Mid-Day pH (10) check	<u>/</u>	<u>/</u>	10.00	<u>10.9</u>	<u>/</u>	+/- 0.1 SU	Yes No	<u>within Range</u>
ORP (mV)	<u>101460467</u> <u>08/21</u>	<u>13.33</u>	228	<u>243.5</u>	<u>228</u>	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	<u>96.39</u>		+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	<u>0.89</u>	<u>0.00</u>	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1.00	<u>1.31</u>	<u>1.05</u>	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10.00	<u>7.99</u>	<u>10.00</u>	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH TAVKOR

Date: 3-12-2021

Time (start): 0823

Time (finish): 0837

smarTroll SN: 728 563

Turbidity Meter Type: LaMotte 2020we

SN: 710-0711

Weather Conditions: SONNY, 50°F

Facility and Unit: Plant Hammond AP-1/2

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)	20610025 08/2024	20.57	4490	4492.6 4392.6 (VT)	4490	± 5 %	Yes No	
pH (4)	"	"	4.00	3.97	4.00	± 0.1 SU	Yes No	
Mid-Day pH (4) check	"	23.92	4.00	4.04	4.00	± 0.1 SU	Yes No	
pH (7)	19340057 08/2024	19.53	7.00	7.01	7.00	± 0.1 SU	Yes No	
Mid-Day pH (7) check	"	22.74	7.00	7.06	7.00	± 0.1 SU	Yes No	
pH (10)	19320102 08/2024	18.78	10.00	10.05	10.00	± 0.1 SU	Yes No	
Mid-Day pH (10) check	"	21.91	10.00	9.98	10.00	± 0.1 SU	Yes No	
ORP (mV)	19460167 08/2024	18.26	228	238.2	228	± 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	96.86	100	± 6 % saturation	Yes No	
Turbidity 0 NTU			0	-0.01	0	± 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	1.11	1.00	± 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00	10.45	10.00	± 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/15/2021

Time (start): 0740

Time (finish): 0800

SmartTroll SN: 728550

Turbidity Meter Type: LaMotte 2020we

SN: 6411-1416

Weather Conditions: 60°F cloudy

Facility and Unit: Plant Hammond AP-1/2

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)	20016625 8/2021	19.11	4490	4576	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	4.03	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check	20010025 8/2021	20.16	4.00	4.19	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 8/2021		7.00	7.00	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	19340057 8/2021	26.37	7.00	7.11	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/2021	19.77	10.00	10.03	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check	19320102 8/2021	20.16	10.00	10.04	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	19.77	228	225.2	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	85.39	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.03	0.03	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	0.69	0.69	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	2.89	10.14	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH THAKUR

Date: 3-15-2024

Time (start): 0813

Time (finish): 0824

SmartTroll SN: 728 563

Turbidity Meter Type: LaMotte 2020we

SN: 710-0711

Weather Conditions: CLOUDY, 60°F

Facility and Unit: Plant Hammond AP-1/2

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)	20610025 08/21	15.74	4490	4662.8	4490	+/- 5 %	Yes No	
pH (4)	"	"	4.00	3.96	4.00	+/- 0.1 SU	Yes No	
Mid-Day pH (4) check	"	18.52	4.00	4.05	4.00	+/- 0.1 SU	Yes No	
pH (7)	19390057 08/2024	18.72	7.00	6.99	7.00	+/- 0.1 SU	Yes No	
Mid-Day pH (7) check	"	18.26	7.00	7.07	7.00	+/- 0.1 SU	Yes No	
pH (10)	193 20102 08/2021	16.87	10.00	10.08	10.00	+/- 0.1 SU	Yes No	
Mid-Day pH (10) check	"	17.86	10.00	10.02	10.00	+/- 0.1 SU	Yes No	
ORP (mV)	194 0167 08/2021	16.87	228	238.8	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	93.38	100	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	-0.02	0.00	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	1.24	1.00	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00	9.54	10.00	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/16/2021

Time (start): 0745

Time (finish): 0815

SmartTroll SN: 228550

Turbidity Meter Type: LaMotte 2020we

SN: 6411-1414

Weather Conditions: 50°F raining

Facility and Unit: Plant Hammond AP-1/2

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	18.21	4490	4405	4490	± 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	3.92	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	19340057 8/2021	18	4.00	6.95	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	20010025 8/2021	18.5 19.21 68	7.00	6.98 4.02	6.98 4.02	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	19340057 8/2021	19.21	7.00	6.98	6.98	+/- 0.1 SU	<input type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/2021	12.99	10.00	9.99	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check	19320102 8/2021	18.34	10.00	10.03	10.03	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	17.81	228	236.8	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	94.10	100	± 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	0.22	6.71	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	7.85	10.25	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH TAJROOP

Date: 3-16-2021

Time (start): 0750

Time (finish): 0810

smarTroll SN: 728 563

Turbidity Meter Type: LaMotte 2020we

SN: 710-0711

Weather Conditions: RAIN, 50°F

Facility and Unit: Plant Hammond AP-1/2

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)	20610025	16.97	4490	4395.8	4490	+/- 5 %	Yes No	
pH (4)	08/21		4.00	3.99	4.00	+/- 0.1 SU	Yes No	
Mid-Day pH (4) check	"	15.21	4.00	4.08	4.00	+/- 0.1 SU	Yes No	
pH (7)	19340057	17.01	7.00	6.95	7.00	+/- 0.1 SU	Yes No	
Mid-Day pH (7) check	"	15.93	7.00	7.05	7.00	+/- 0.1 SU	Yes No	
pH (10)	19320102	17.01	10.00	9.98	10.00	+/- 0.1 SU	Yes No	
Mid-Day pH (10) check	"	16.28	10.00	10.04	10.00	+/- 0.1 SU	Yes No	
ORP (mV)	19460167	16.93	228	238.7	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	99.79	100	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0.03	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	1.07	1.00	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00	9.62	10.00	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Wessan

Date: 3/16/21

Time (start): 0730

Time (finish): 0810

SmartTroll SN: 728566

Turbidity Meter Type: LaMotte 2020we

SN: 17289-2612

Weather Conditions: cloudy / ~~light~~ Rainy

Facility and Unit: Plant Hammond AP-1/2

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	12.94	4490	41523.2	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	3.94 ↑	4.00 ↑	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check	20010025	12.94	4.00	4.07	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19310057 03/21	13.23	7.00	7.04	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	19310057	13.23	7.00	7.01	7.00	+/- 0.1 SU	<input type="radio"/> Yes <input type="radio"/> No	
pH (10)	1932902 08/21	13.46	10.00	10.06	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check	1932902	13.46	10.00	9.97	10.00	+/- 0.1 SU	<input type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 08/21	13.35	228	230.9	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	95.73	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.00	0.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	0.27	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	11.29	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISHA TANKOR

Date: 3-17-2021

Time (start): 07:30

Time (finish): 07:39

SmartTroll SN: 728563

Turbidity Meter Type: LaMotte 2020w

SN: 710-0711

Weather Conditions: SHOWERS/THUNDERSTORMS, 50°F

Facility and Unit: Plant Hammond AP-1/2

Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cat Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20610025	16.07	4490	4469.2	4490	+/- 5 %	Yes No	
pH (4)	08/21		4.00	3.95	4.00	+/- 0.1 SU	Yes No	
Mid-Day pH (4) check	"	18.91	4.00	4.07	4.00	+/- 0.1 SU	Yes No	
pH (7)	19340057 08/21	16.02	7.00	7.00	7.00	+/- 0.1 SU	Yes No	
Mid-Day pH (7) check	"	19.50	7.00	6.99	7.00	+/- 0.1 SU	Yes No	
pH (10)	19320102 08/21	15.76	10.00	10.09	10.00	+/- 0.1 SU	Yes No	
Mid-Day pH (10) check	"	19.28	10.00	10.01	10.00	+/- 0.1 SU	Yes No	
ORP (mV)	19460167 08/21	15.06	228	240.2	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	95.73	100	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	<0.01	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	1.10	1.00	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00	10.87	10.00	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Alston

Date: 3/17

Time (start): 7:20

Time (finish): 0800

smarTroll SN: 728886

Turbidity Meter Type: LaMotte 2020we

SN: 12289-2012

Weather Conditions: cloudy/rainy 50°

Facility and Unit: Plant Hammond AP-1/2

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)	26010025 52001002	11.21	4490	4435.6	4490	± 5 %	Yes No	
pH (4)	08121		4.00	3.99	4.00	+/- 0.1 SU	Yes No	
Mid-Day pH (4) check	/	/	4.00	4.00	/	+/- 0.1 SU	Yes No	within range
pH (7)	19310037 08121	11.23	7.00	7.05	7.00	+/- 0.1 SU	Yes No	
Mid-Day pH (7) check	/	/	7.00	7.02	/	+/- 0.1 SU	Yes No	
pH (10)	1432402 08121	11.23	10.00	10.02	/	+/- 0.1 SU	Yes No	
Mid-Day pH (10) check	/	11.29	10.00	10.06	10.00	+/- 0.1 SU	Yes No	
ORP (mV)	14160167 08121	11.34	228	247.8	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	95.72	100	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	1.10	0.00	± 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	0.27	1.01	± 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00	9.02	10	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 3/10/2021 Time (start): 0715 Time (finish): 0735

SmartTroll SN: 728550 Turbidity Meter Type: LaMotte 2020we SN: 6411-1414

Weather Conditions: 50°F cloudy Facility and Unit: Plant Hammond AP-1/2 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 8/10/21	15.75	4490	4506.5	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	4	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check	2001025 8/10/21	16.5	4.00	4.01	4.01	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340657 8/10/21	15.73	7.00	7	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	19340657 8/10/21	16.21	7.00	6.93	6.93	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/10/21	15.69	10.00	10.02	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check	19320102 8/10/21	16.04	10.00	10.05	10.05	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/10/21	15.59	228	221.3	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	88.06	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	0.94	0.94	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	9.61	9.61	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Messem

Date: 3/18/21

Time (start): 0730

Time (finish): 8:10

smarTroll SN: 728560

Turbidity Meter Type: LaMotte 2020we

SN: 222-6822

Weather Conditions: cloudy 60°

Facility and Unit: Plant Hammond AP-1/2

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)	20010028	15.21	4490	4475.5	4490	+/- 5 %	<input checked="" type="checkbox"/> Yes No	
pH (4)	08/21		4.00	4.00	4.00	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
Mid-Day pH (4) check	/	/	4.00	4.01	/	+/- 0.1 SU	Yes No	
pH (7)	14360037 08/21	14.44	7.00	7.02	7.00	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
Mid-Day pH (7) check	/	/	7.00	7.06	/	+/- 0.1 SU	Yes No	
pH (10)	1432902 08/21	14.44	10.00	10.06	10.00	+/- 0.1 SU	Yes No	
Mid-Day pH (10) check	/	/	10.00	10.00	/	+/- 0.1 SU	Yes No	
ORP (mV)	14460167 08/21	14.89	228	222.5	228	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1 pt, 100% water saturated air cal)			100	100.98	100.00	+/- 6 % saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0	0.06	0.00	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1.00	0.11	1.08	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10.00	10.94	9.54	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 3/18/2021 Time (start): 0730 Time (finish): 0810
 smarTroll SN: 728550 Turbidity Meter Type: LaMotte 2020we SN: 6411-1496
 Weather Conditions: 60°F cloudy Facility and Unit: Plant Hammond AP-1/2 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	17.38	4490	4511.6	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	3.99	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check	20010025 8/2021	19.76	4.00	4.14	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 8/2021	17.52	7.00	7.0	7.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	19340057 8/2021	20.22	7.00	7.04	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/2021	17.54	10.00	10.02	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check	19320102 8/2021	20.13	10.00	9.98	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	17.54	228	223.4	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	71.47	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	1.18	1.18	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	10.42	10.42	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH TAJWAD Date: ¹⁸3-17-2021 Time (start): 0806 Time (finish): 0816
 smarTroll SN: 728563 Turbidity Meter Type: LaMotte 2020we SN: 710-0711
 Weather Conditions: SHOWERS, STORMS, 50°F Facility and Unit: Plant Hammond AP-1/2 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)	20610025 08/21	16.52	4490	4532.6	4490	± 5 %	<input checked="" type="radio"/> Yes No	
pH (4)	"	"	4.00	3.95	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
Mid-Day pH (4) check	"	19.31	4.00	4.05	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 08/21	17.03	7.00	6.99	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
Mid-Day pH (7) check	"	19.54	7.00	7.01	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/21	17.10	10.00	10.04	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
Mid-Day pH (10) check	"	19.55	10.00	9.99	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19401107 08/21	17.05	228	238.1	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt. 100% water saturated air cal)			100	99.19	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.00	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1.00	1.06	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10.00	10.45	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 3/19/2021 Time (start): 0756 Time (finish): 0820
 smartTroll SN: 728550 Turbidity Meter Type: LaMotte 2020we SN: 6411-1416
 Weather Conditions: 50°F cloudy Facility and Unit: Plant Hammond AP-1/2 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	14.87	4490	4459.7	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	3.97	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check			4.00			+/- 0.1 SU	Yes <input type="radio"/> No	
pH (7)	14340057 8/2021	14.97	7.00	6.97	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check			7.00			+/- 0.1 SU	Yes <input type="radio"/> No	
pH (10)	19320102 8/2021	15.06	10.00	9.98	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check			10.00			+/- 0.1 SU	Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	15.13	228	230.9	229	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	104.34	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	.93	.93	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	9.76	9.76	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Veadar

Date: 3/15/21

Time (start): 7:15

Time (finish): 7:45

SmartTroll SN: 728502

Turbidity Meter Type: LaMotte 2020we

SN: 122892612

Weather Conditions: _____

Facility and Unit: Plant Hammond AP-1/2

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	15.35	4490	4530.3	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/21		4.00	3.99	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check	_____	_____	4.00	4.02	_____	+/- 0.1 SU	Yes No	within range
pH (7)	14340057	15.71	7.00	7.04	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check	08/21		7.00	6.99	_____	+/- 0.1 SU	Yes No	within range
pH (10)	14524902	15.84	10.00	10.01	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check	08/21		10.00	10.00	_____	+/- 0.1 SU	Yes No	within range
ORP (mV)	14460167	15.80	228	227.22	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	95.71	100	+/- 6% saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.00	0.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	0.17	1.05	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	10.34	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kressler Date: 3/19/21 Time (start): 0730 Time (finish): 0815
 smartroll SN: 728566 Turbidity Meter Type: LaMotte 2020we SN: 6411-1416
 Weather Conditions: _____ Facility and Unit: Plant Hammond AP-1/2 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)	<u>2001025</u>	<u>4.94</u>	4490	<u>4547.1</u>	<u>4490</u>	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	<u>8/21</u>		4.00	<u>4.04</u>	<u>4.0</u>	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check			4.00	<u>4.02</u>	_____	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	<u>19370057</u> <u>8/21</u>	<u>10.13</u>	7.00	<u>7.10</u>	<u>7.00</u>	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check			7.00	<u>7.00</u>	_____	+/- 0.1 SU	<input type="radio"/> Yes <input type="radio"/> No	
pH (10)	<u>19376102</u> <u>8/21</u>		10.00	<u>10.01</u>	_____	+/- 0.1 SU	<input type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check		<u>10.30</u>	10.00	<u>10.05</u>	<u>10.00</u>	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	<u>11420167</u> <u>8/21</u>	<u>10.32</u>	228	<u>234.1</u>	<u>228</u>	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	<u>98.16</u>	<u>100</u>	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	<u>0</u>	<u>0</u>	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	<u>1.05</u>	<u>1.05</u>	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	<u>9.78</u>	<u>9.98</u>	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

June 2021

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 6/16/2021

Time (start): 0720

Time (finish): 0750

smarTroll SN: 728623

Turbidity Meter Type: LaMote 2020we

SN: 977-2111

Weather Conditions: Sunny, 70°

Facility and Unit: Plant Hammond AP-1/2

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	22.50	4490	4441.2	44190	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	3.96	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check			4.00			+/- 0.1 SU	<input type="radio"/> Yes <input type="radio"/> No	
pH (7)	14340057 08/21	23.48	7.00	7.01	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check			7.00			+/- 0.1 SU	<input type="radio"/> Yes <input type="radio"/> No	
pH (10)	14320102 08/21	23.52	10.00	10.02	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check			10.00			+/- 0.1 SU	<input type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 08/21	23.05	228	229.5	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	92.38	100	+/- 6% saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.66	0.02	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	1.13	1.04	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	8.87	9.97	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 6/17/21

Time (start): 0735

Time (finish): 0800

smarTroll SN: 728623

Turbidity Meter Type: LaMote 2020we

SN: 477-2111

Weather Conditions: Sunny, warm

Facility and Unit: Plant Hammond AP-1/2

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 08/21	22.83 23.66	4490	4465.0	4490	+/- 5%	<input checked="" type="radio"/> Yes No	
pH (4)			4.00	4.01	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	Had to restart pH cal.
Mid-Day pH (4) check			4.00			+/- 0.1 SU	Yes No	
pH (7)	1934057 08/21	23.40 23.84	7.00	6.99	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
Mid-Day pH (7) check			7.00			+/- 0.1 SU	Yes No	
pH (10)	1932002 08/21	23.93 23.91	10.00	9.94	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
Mid-Day pH (10) check			10.00			+/- 0.1 SU	Yes No	
ORP (mV)	19460167 08/21	24.18	228	226.3	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	97.44	100	+/- 6% saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	1.16	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1.00	0.44	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10.00	8.64	9.91	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Hester

Date: 6/18/2021

Time (start): 0925

Time (finish): 0830

smartTroll SN: 728623

Turbidity Meter Type: LaMote 2020we

SN: 977-211

Weather Conditions: Sunny, 65°

Facility and Unit: Plant Hammond AP-1/2

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	20.99	4490	4575.0	4490.0	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	3.99	4.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check			4.00			+/- 0.1 SU	Yes <input type="radio"/> No	
pH (7)	19340057 08/21	21.96	7.00	6.97	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check			7.00			+/- 0.1 SU	Yes <input type="radio"/> No	
pH (10)	1932007 08/21	22.43	10.00	9.96	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check			10.00			+/- 0.1 SU	Yes <input type="radio"/> No	
ORP (mV)	19460167 08/21	22.35	228	230.4	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	101.47	100.00	+/- 6% saturation	Yes <input type="radio"/> No	
Turbidity 0 NTU			0	1.12	0.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	9.93	9.97	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	1.93	1.43	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 6/15/2021

Time (start): 0722

Time (finish): 0750

smarTroll SN: 728623

Turbidity Meter Type: LaMote 2020we

SN: 997-2111

Weather Conditions: 70° Sunny

Facility and Unit: Plant Hammond AP-1/2- AP-4

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	23.30	4490	4273.9	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/2021		4.00	4.23	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (4) check			4.00			+/- 0.1 SU	Yes <input type="radio"/> No <input type="radio"/>	
pH (7)	14340657 08/21	23.50	7.00	7.45	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (7) check			7.00			+/- 0.1 SU	Yes <input type="radio"/> No <input type="radio"/>	
pH (10)	14320102 08/2021	24.12	10.00	10.40	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Mid-Day pH (10) check			10.00			+/- 0.1 SU	Yes <input type="radio"/> No <input type="radio"/>	
ORP (mV)	14460167 08/2021	24.47	228	218.5	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	102.61	100	+/- 6% saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.58	0.01	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1.00	1.11	0.48	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10.00	9.63		+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

10.08

Supplemental D/O Cal

EQUIPMENT CALIBRATION LOG

Field Technician Thomas Kessler Date 6/15/2021 Time (start) 1040 Time (finish) ~~1050~~ 1058
 smarTroll SN 728623 Turbidity Meter Type: LaMote 2020we SN 977-211
 Weather Conditions 70° Sunny Facility and Unit: Plant Hammond AP-1/2 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)			4490			+/- 5%	Yes No	
pH (4)			4.00			+/- 0.1 SU	Yes No	
Mid-Day pH (4) check			4.00			+/- 0.1 SU	Yes No	
pH (7)			7.00			+/- 0.1 SU	Yes No	
Mid-Day pH (7) check			7.00			+/- 0.1 SU	Yes No	
pH (10)			10.00			+/- 0.1 SU	Yes No	
Mid-Day pH (10) check			10.00			+/- 0.1 SU	Yes No	
ORP (mV)			228			+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	108.64	100	+/- 6% saturation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10:39
Turbidity 0 NTU			100	97.02	100	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10:11:13 11:13 post factory reset
Turbidity 1 NTU			1.00			+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00			+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 06/23/21

Time (start): 1012

Time (finish): 1033

smarTroll SN: 728343

Turbidity Meter Type: LaMotte 2020we

SN: 6411-1416

Weather Conditions: Sunny, 75°

Facility and Unit: AP-4
Plant Hammond AP-12

Project No.: GW6581

Calibration log

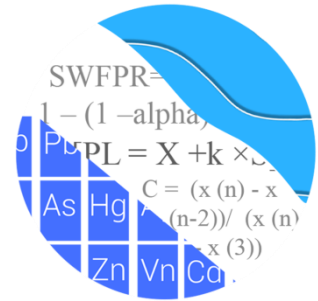
	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 08/21	21.72	4490	4835.0	4490.0	+/- 5 %	Yes No	
pH (4)	08/21		4.00	4.09	4.00	+/- 0.1 SU	Yes No	
Mid-Day pH (4) check	19346057 08/21	22.03	4.00	7.16	7.00	+/- 0.1 SU	Yes No	
pH (7)			7.00			+/- 0.1 SU	Yes No	
Mid-Day pH (7) check			7.00			+/- 0.1 SU	Yes No	
pH (10)	1432002 08/21	22.07	10.00	10.60	10.00	+/- 0.1 SU	Yes No	
Mid-Day pH (10) check			10.00			+/- 0.1 SU	Yes No	
ORP (mV)	19460167 08/21	21.44	228	240.6	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	101.83	100	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0.36	0.01	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1.00	0.38	0.88	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10.00	13.24	9.94	+/- 0.5 NTU	Yes No	

APPENDIX D

Statistical Analysis Reports

September 2020

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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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

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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

<u>Constituent</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	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*

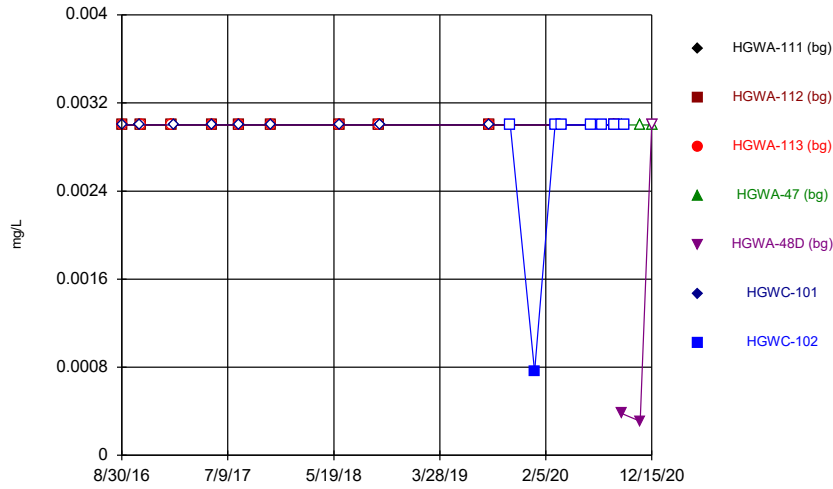
State Confidence Interval - All Results (No Significant)

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)

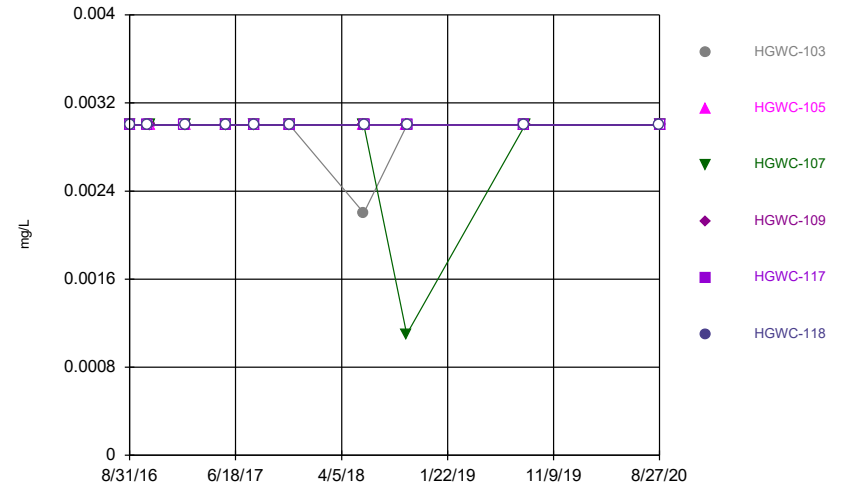
FIGURE A.

Time Series



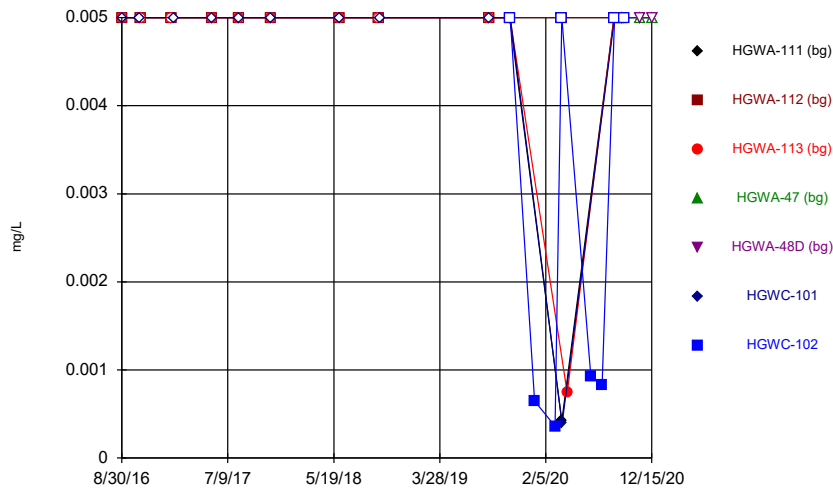
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Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



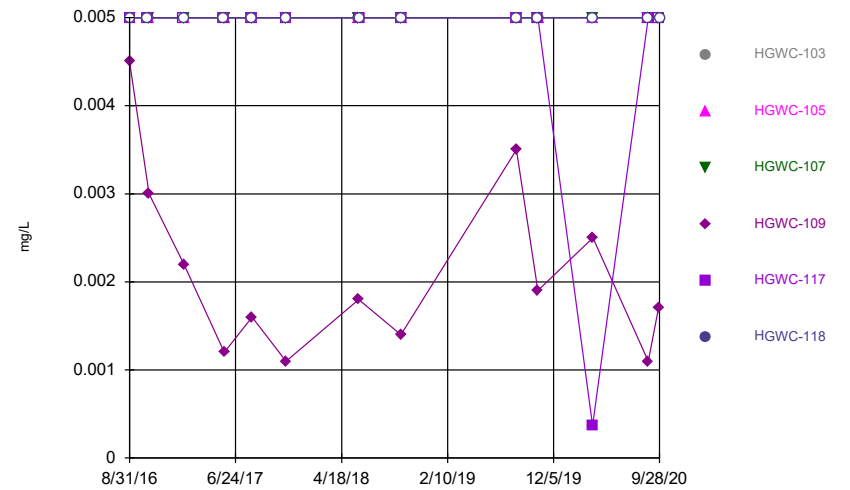
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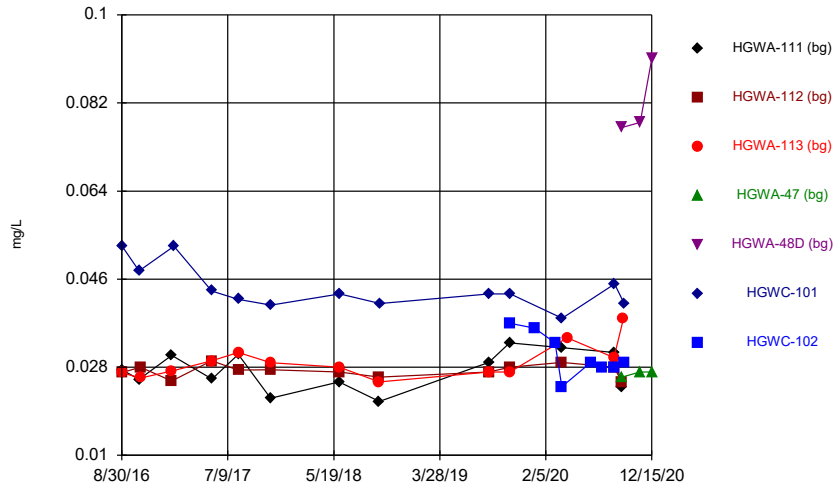
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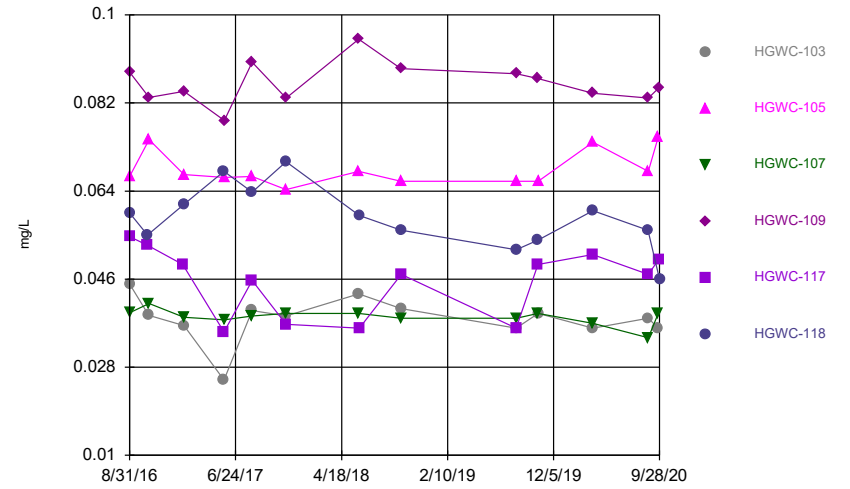
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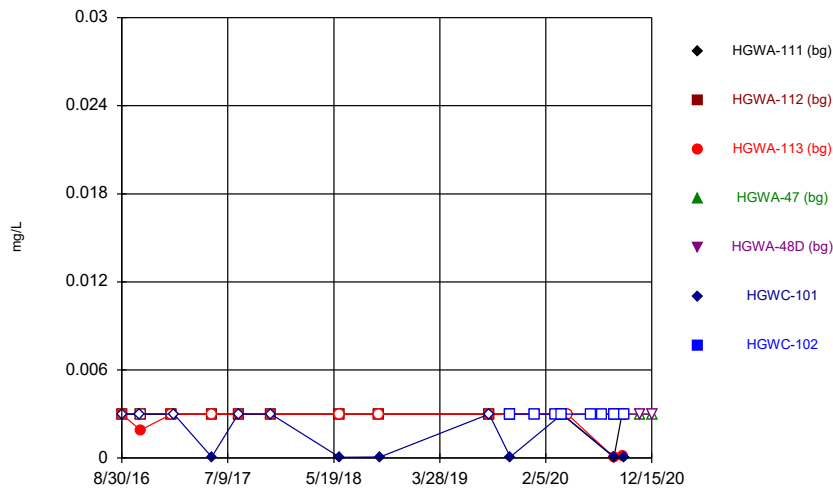
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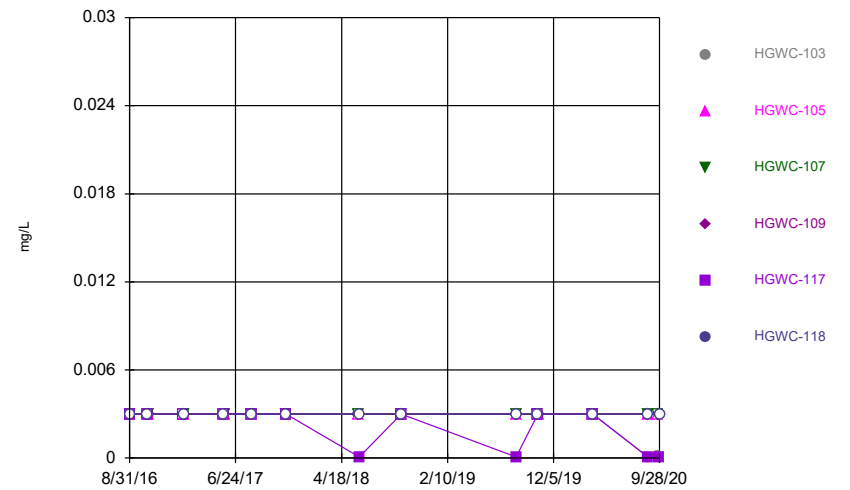
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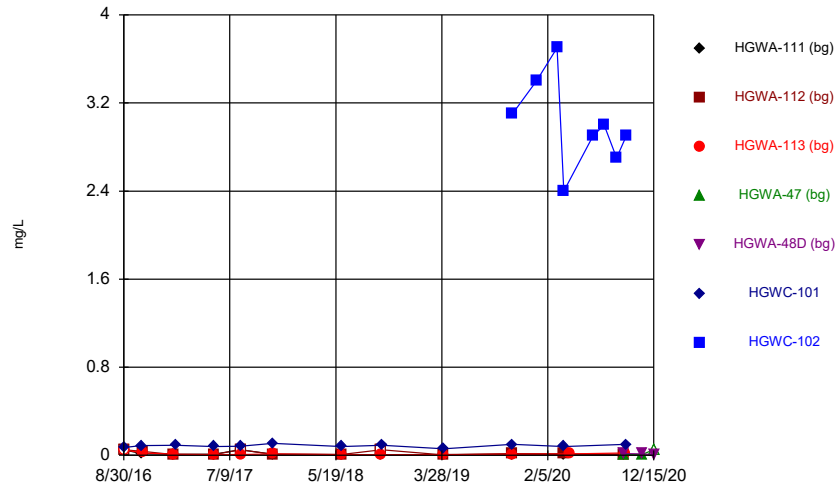
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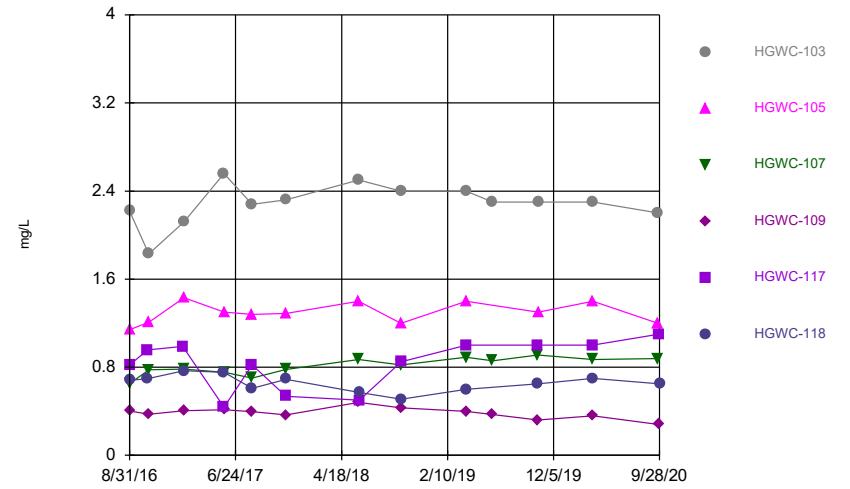
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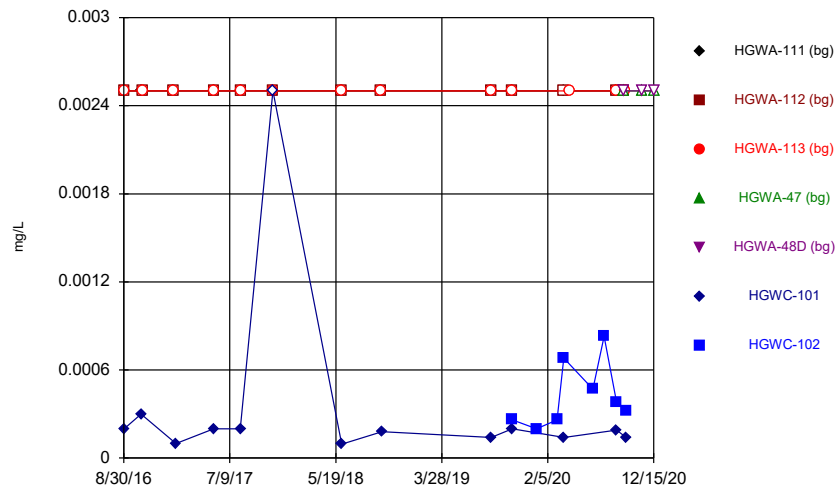
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Time Series



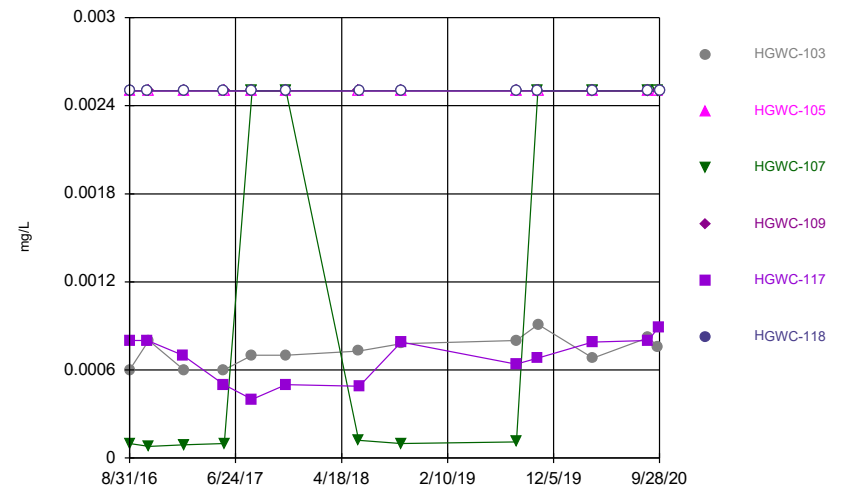
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Time Series



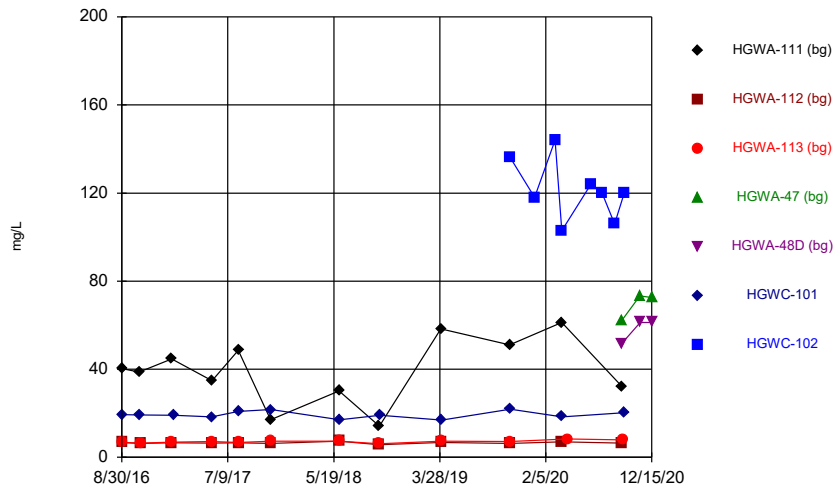
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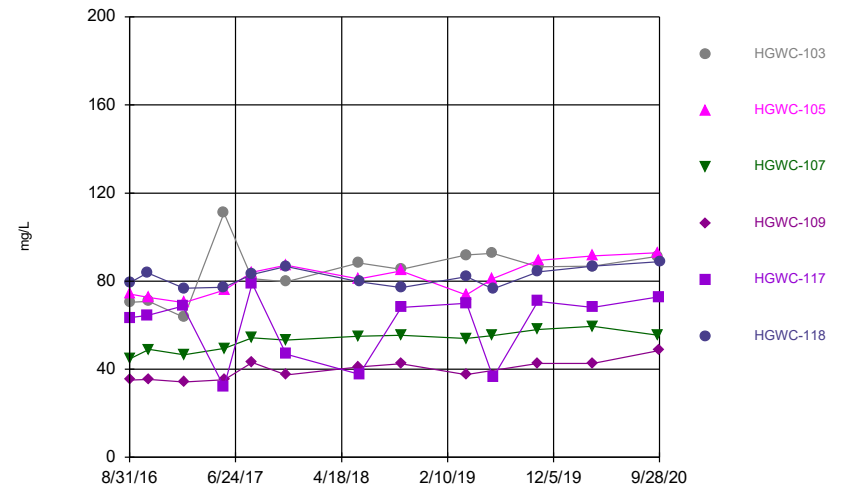
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Time Series



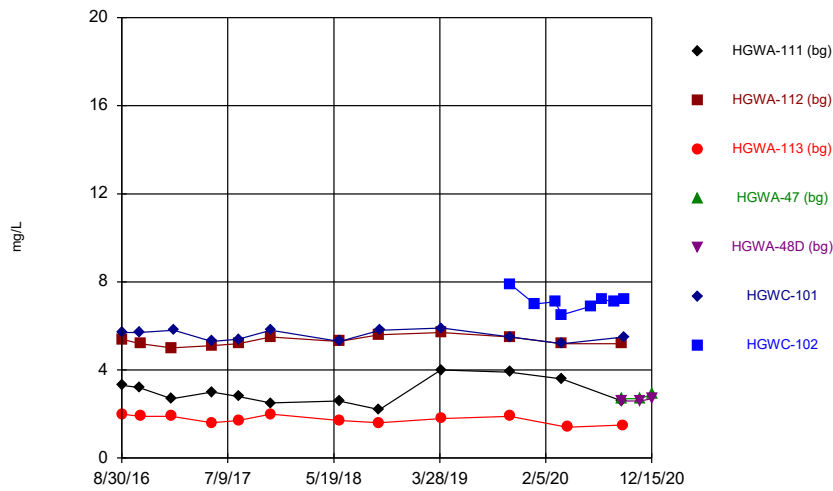
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Time Series



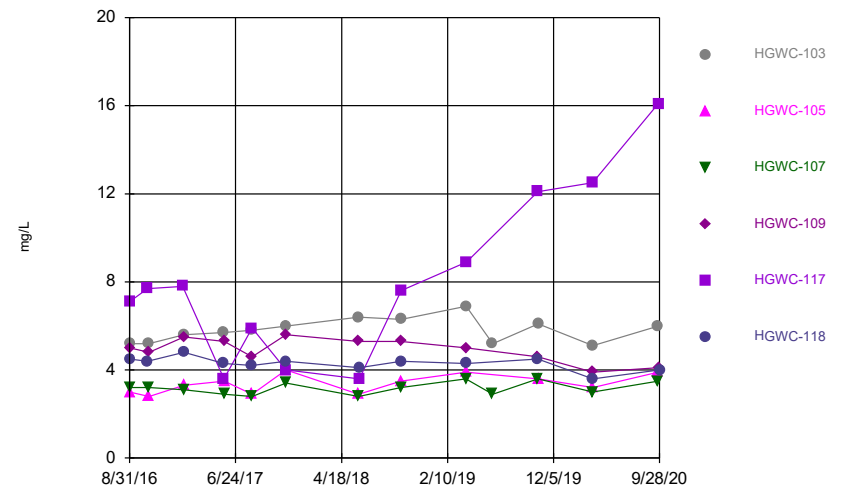
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Time Series



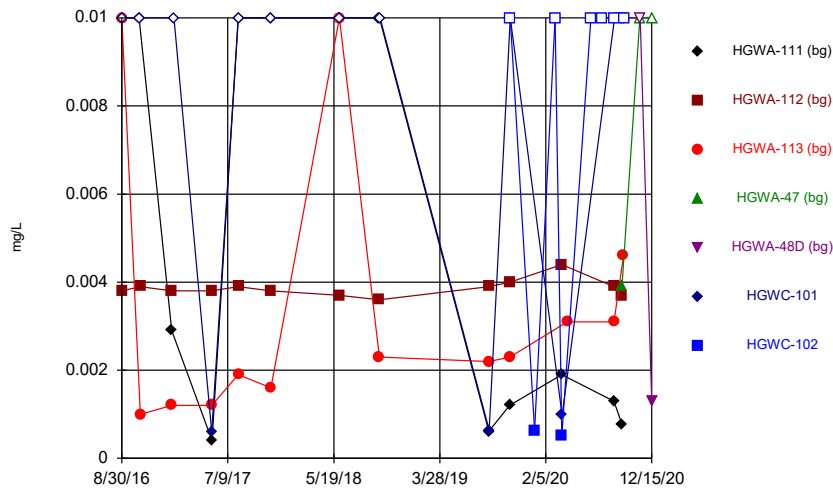
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Time Series



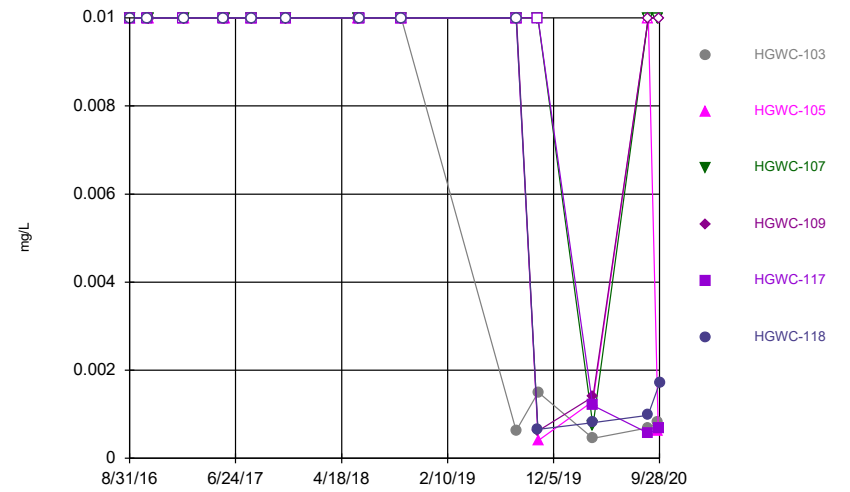
Constituent: Chloride Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



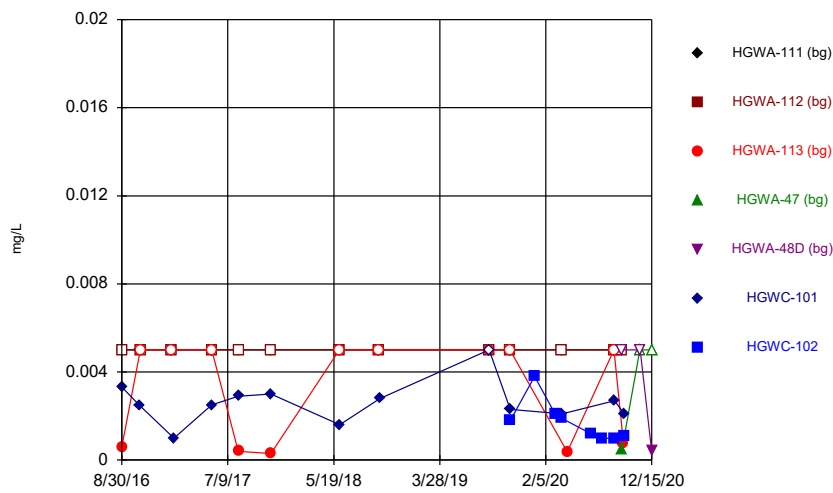
Constituent: Chromium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



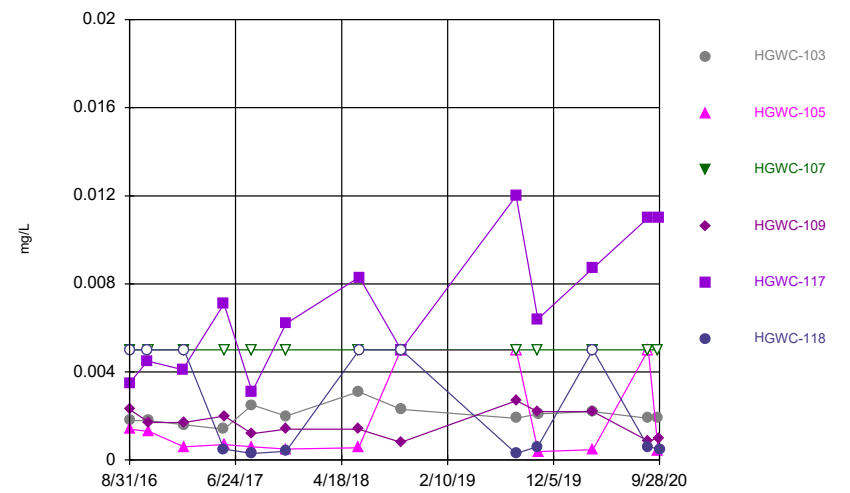
Constituent: Chromium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



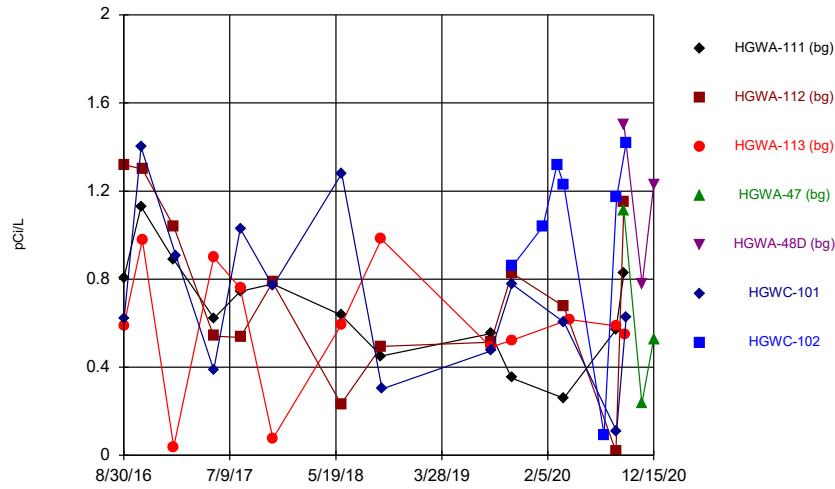
Constituent: Cobalt Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



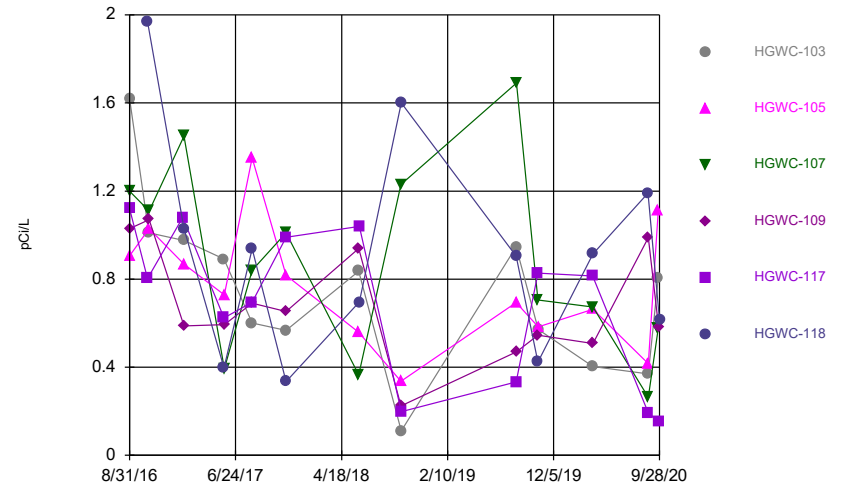
Constituent: Cobalt Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



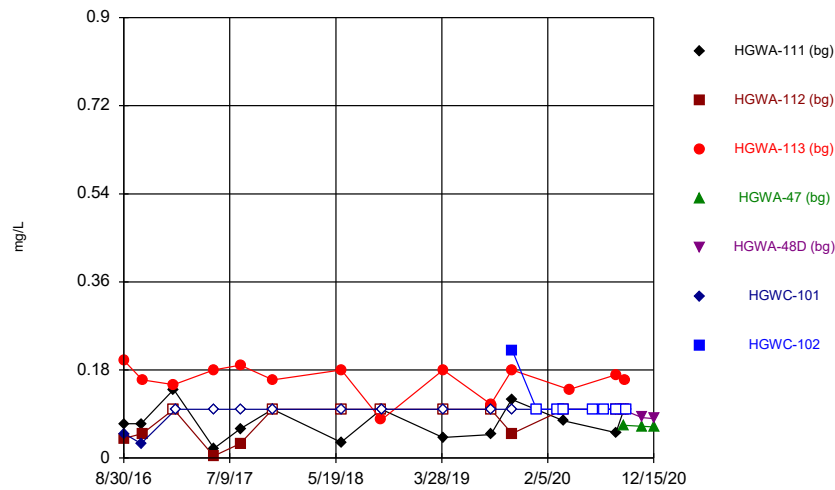
Constituent: Combined Radium 226 & 228 Analysis Run 2/17/2021 2:14 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



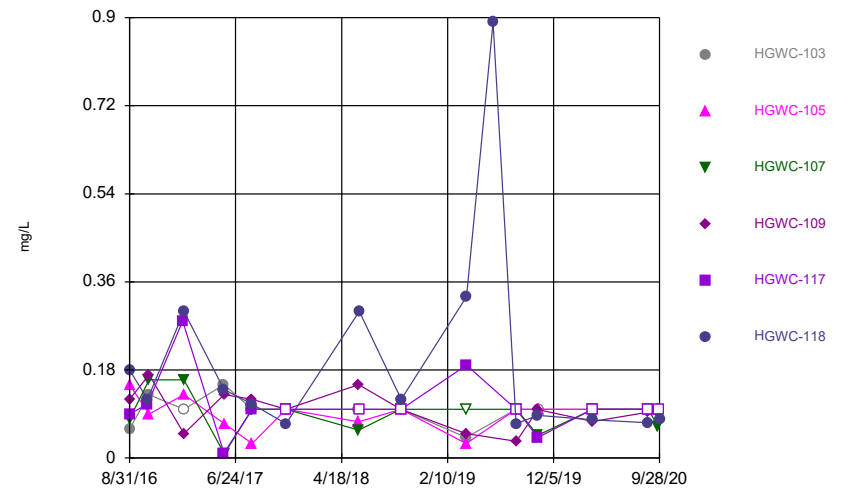
Constituent: Combined Radium 226 & 228 Analysis Run 2/17/2021 2:14 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



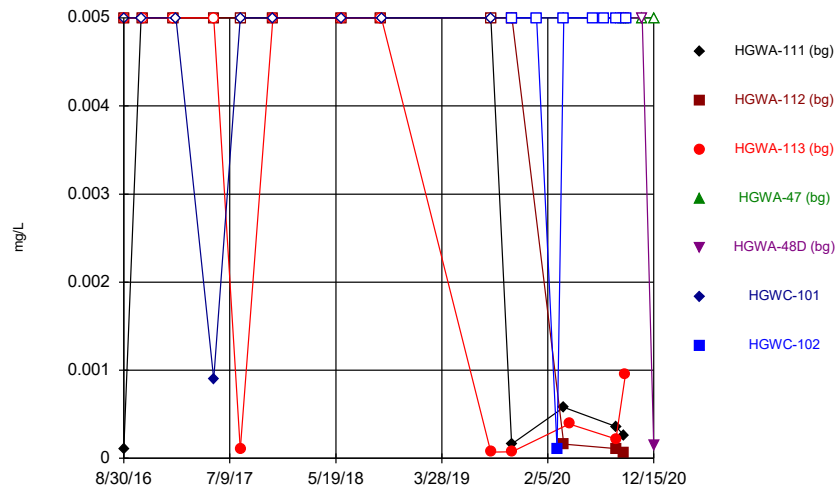
Constituent: Fluoride Analysis Run 2/17/2021 2:14 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



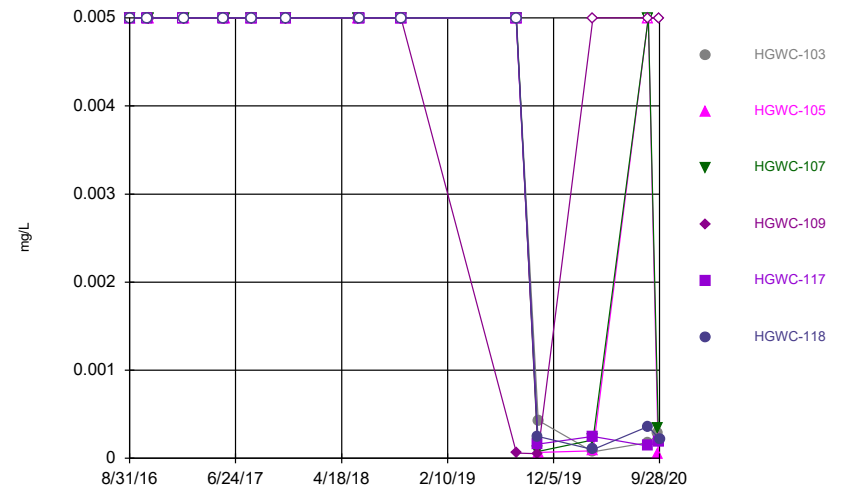
Constituent: Fluoride Analysis Run 2/17/2021 2:14 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



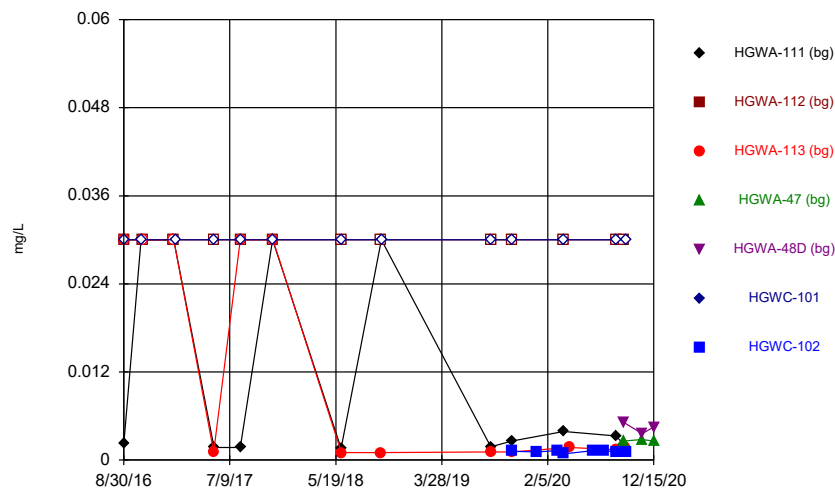
Constituent: Lead Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



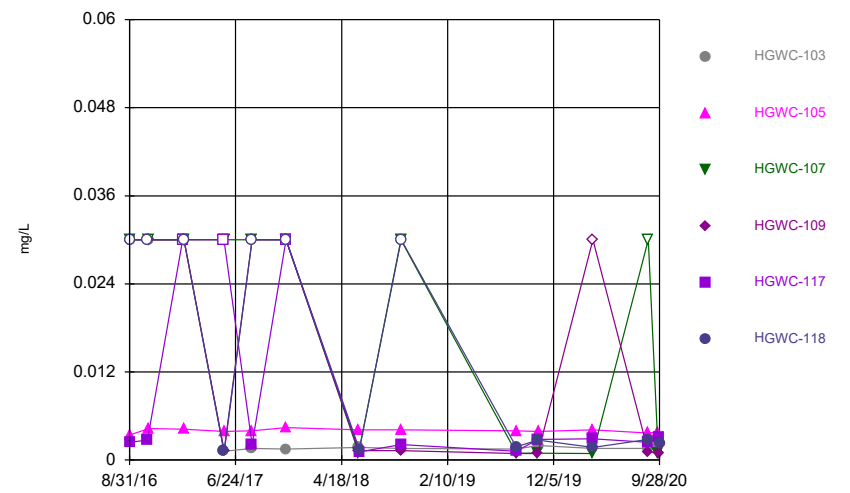
Constituent: Lead Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



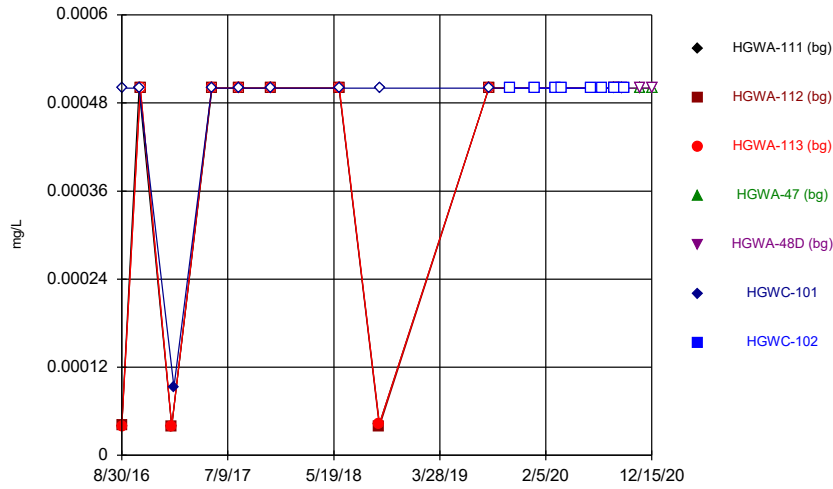
Constituent: Lithium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



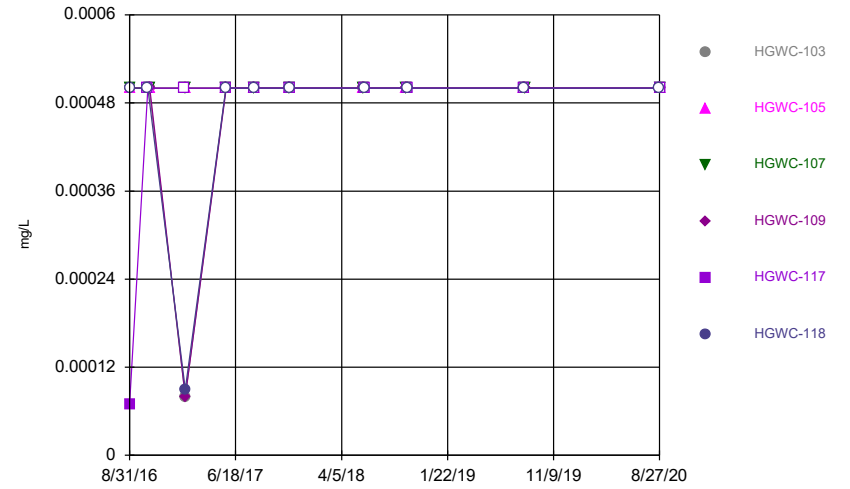
Constituent: Lithium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



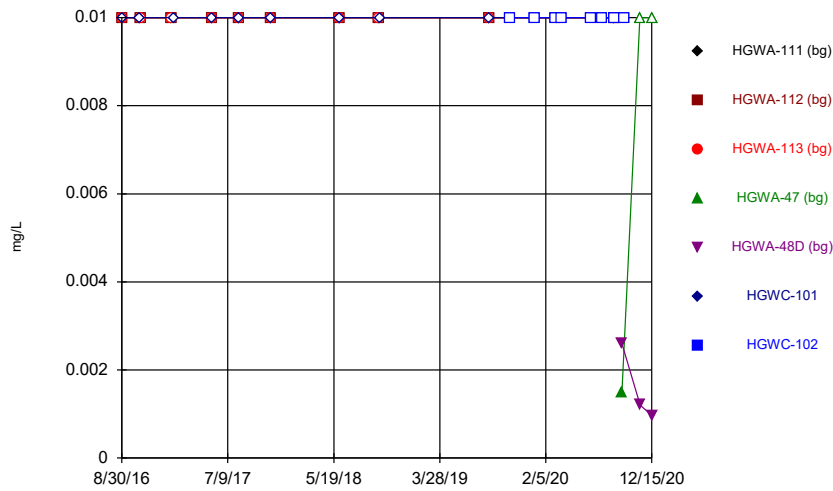
Constituent: Mercury Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



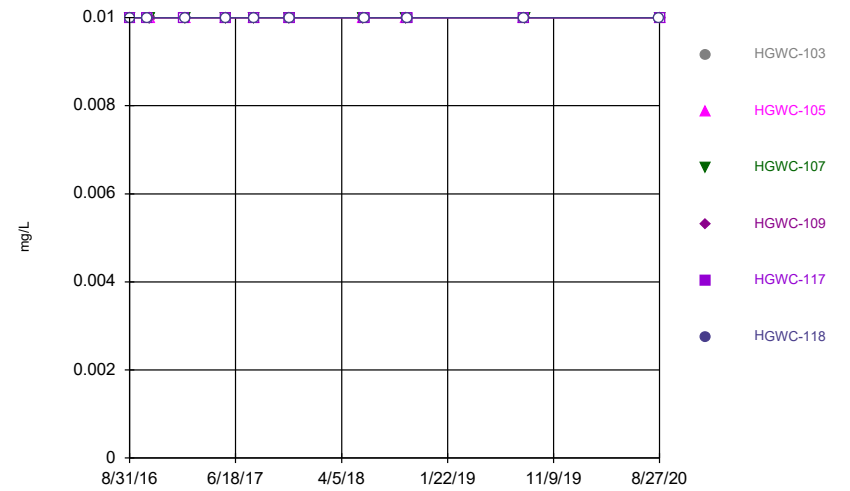
Constituent: Mercury Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



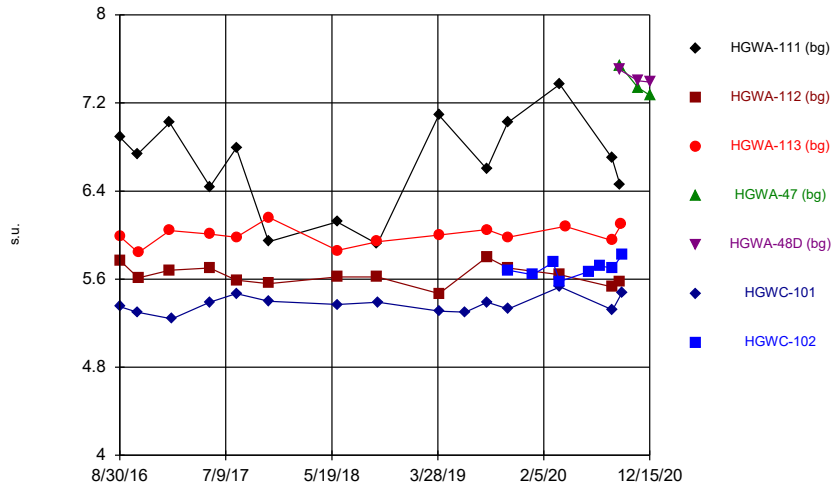
Constituent: Molybdenum Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



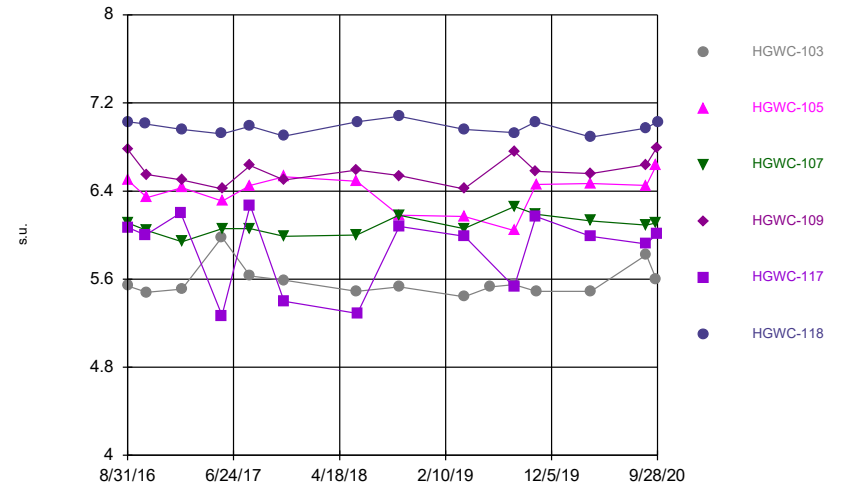
Constituent: Molybdenum Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



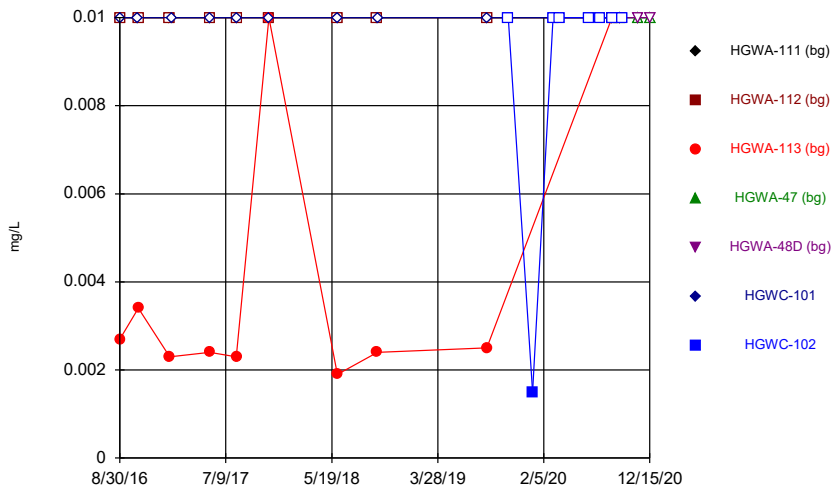
Constituent: pH Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



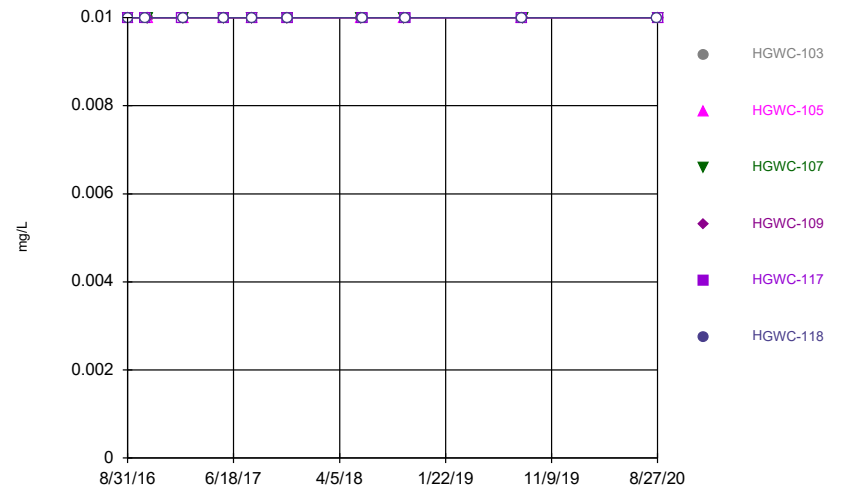
Constituent: pH Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



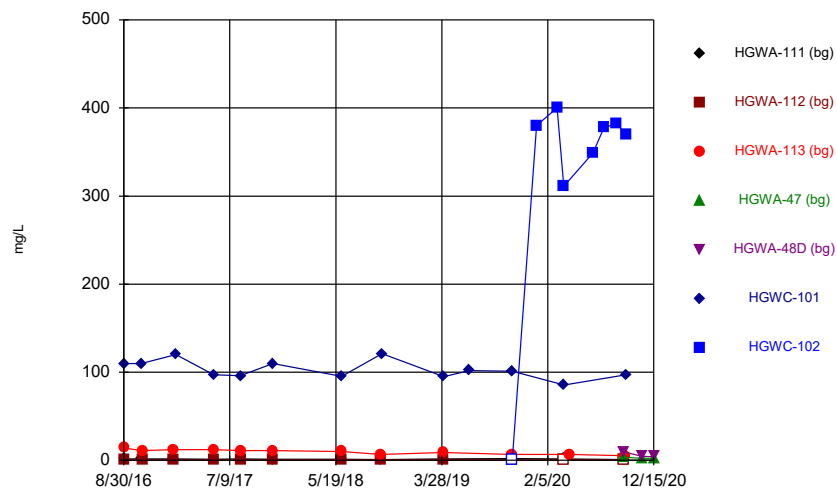
Constituent: Selenium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



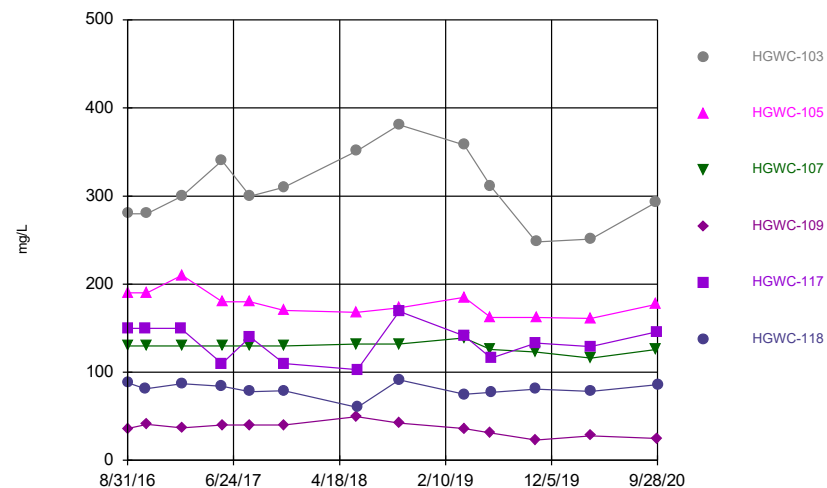
Constituent: Selenium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



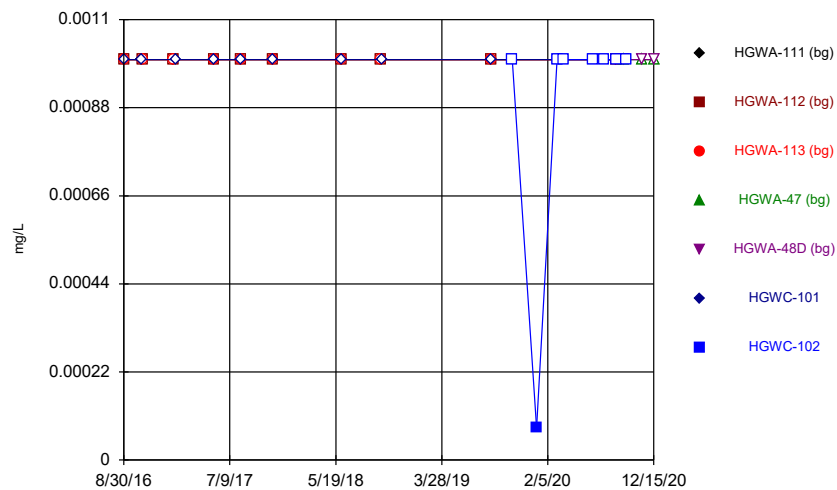
Constituent: Sulfate Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



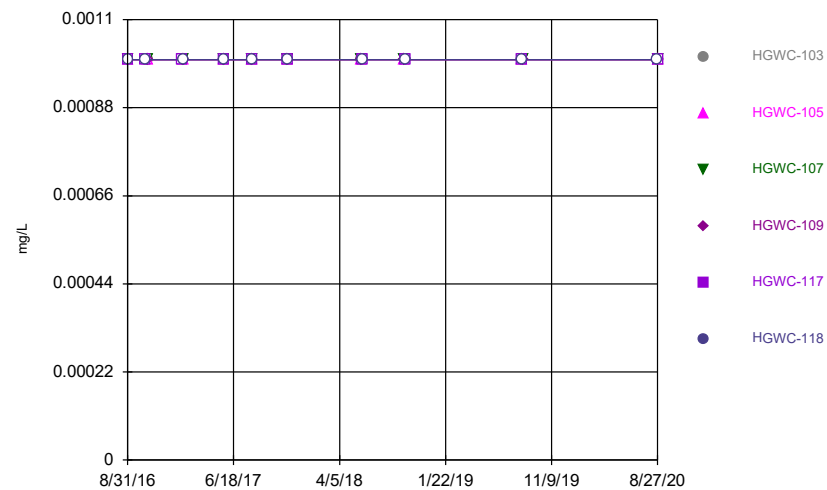
Constituent: Sulfate Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



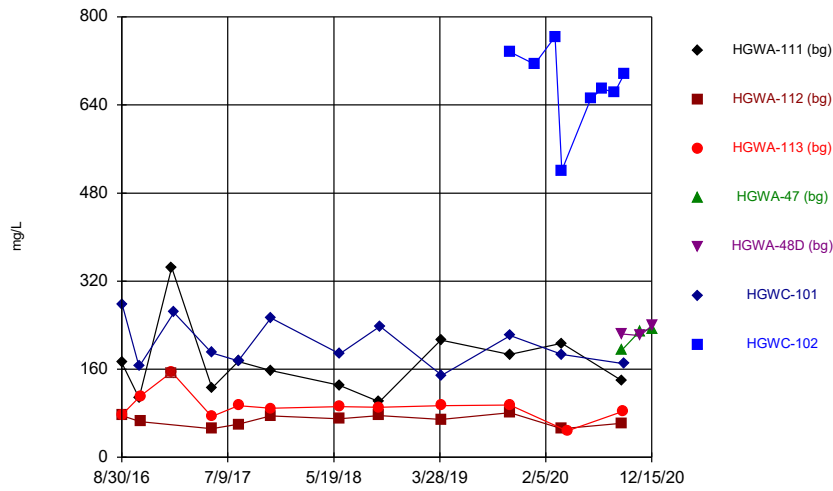
Constituent: Thallium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



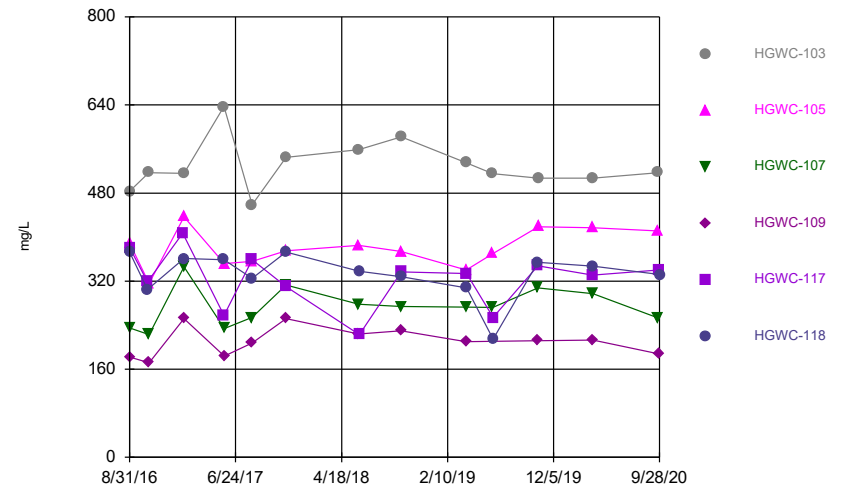
Constituent: Thallium Analysis Run 2/17/2021 2:14 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



Constituent: Total Dissolved Solids Analysis Run 2/17/2021 2:14 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

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

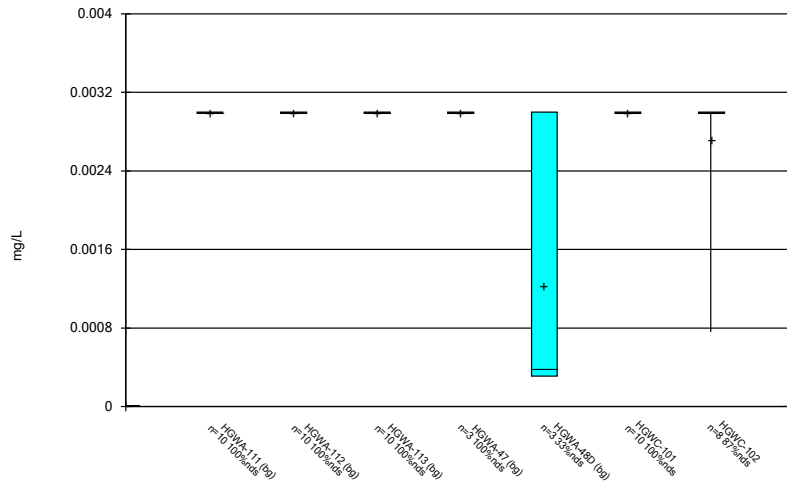
Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/17/2021 2:20 PM

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

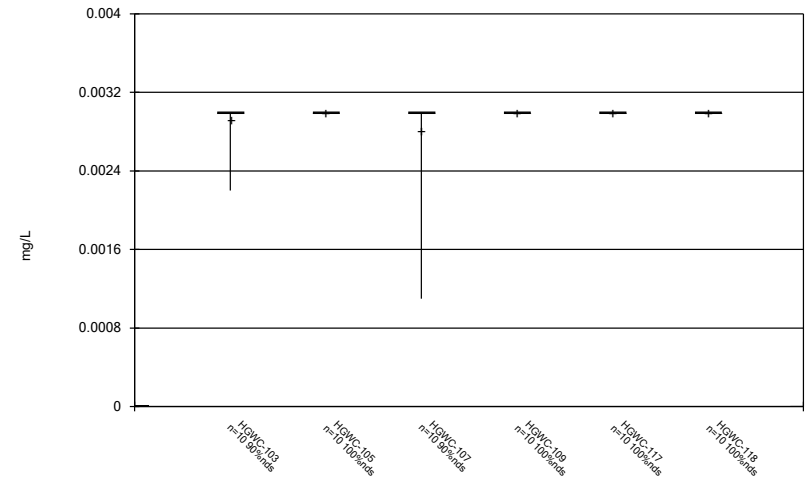
FIGURE B.

Box & Whiskers Plot



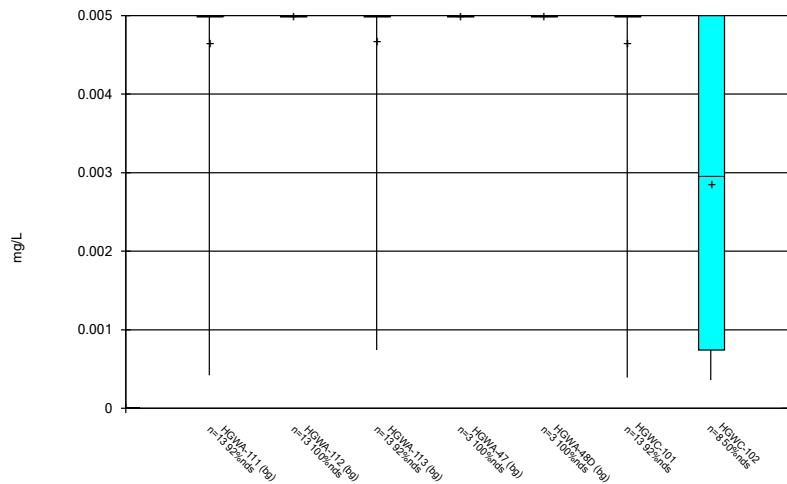
Constituent: Antimony Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



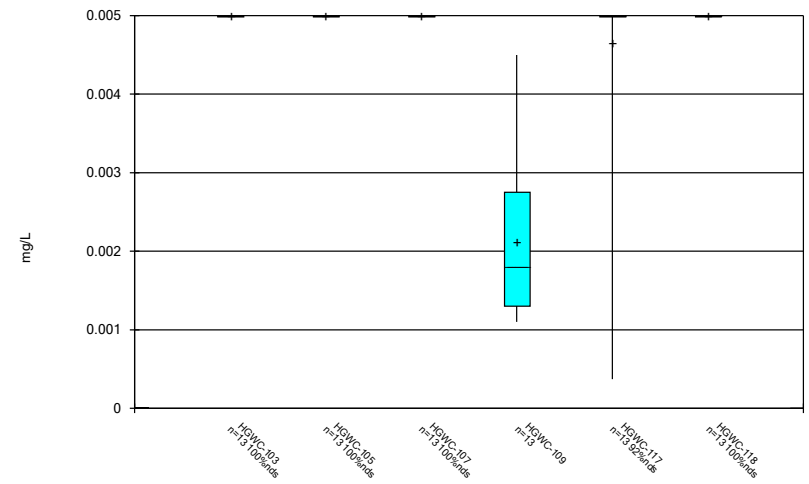
Constituent: Antimony Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



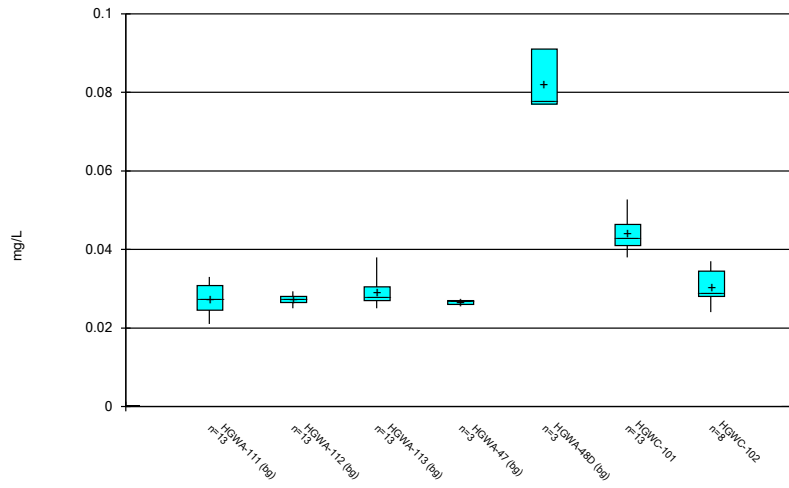
Constituent: Arsenic Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



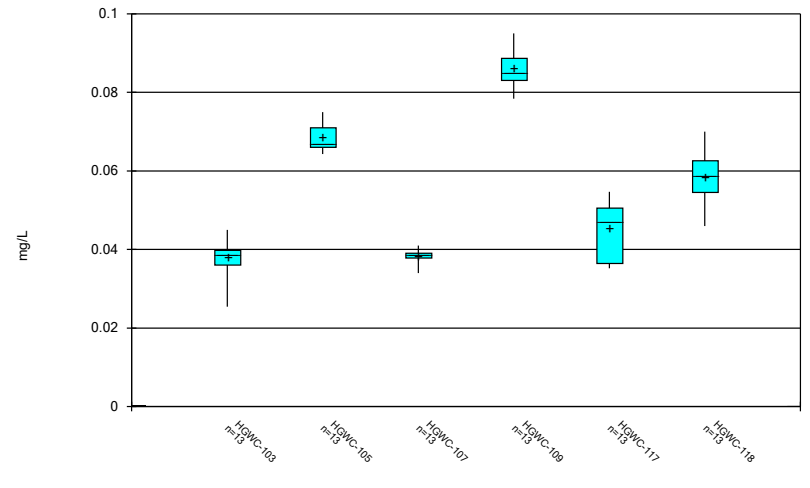
Constituent: Arsenic Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



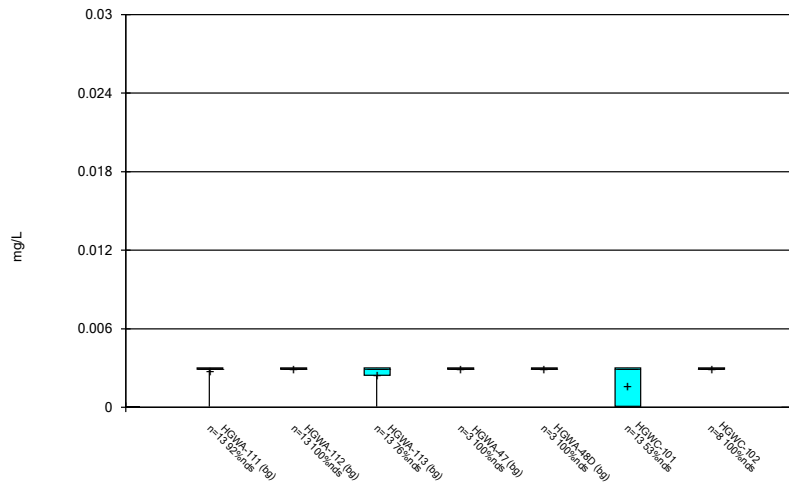
Constituent: Barium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



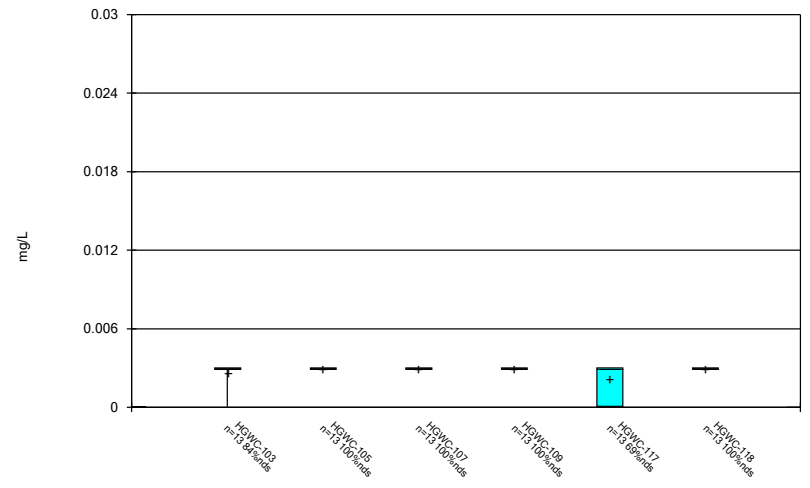
Constituent: Barium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



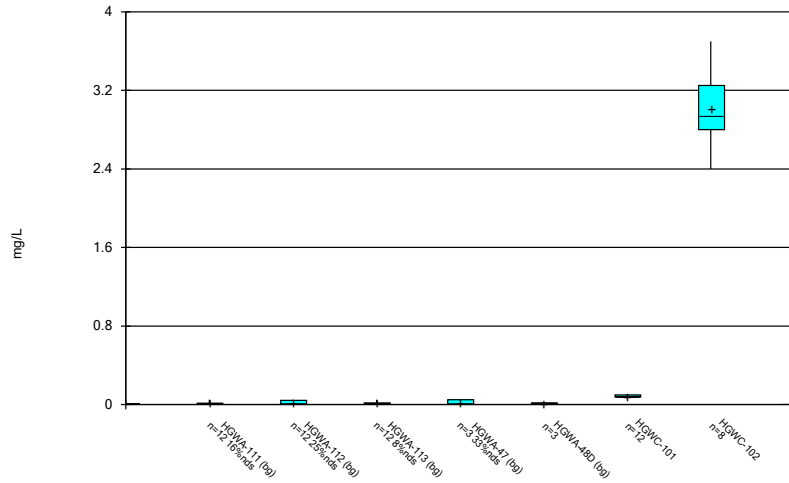
Constituent: Beryllium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



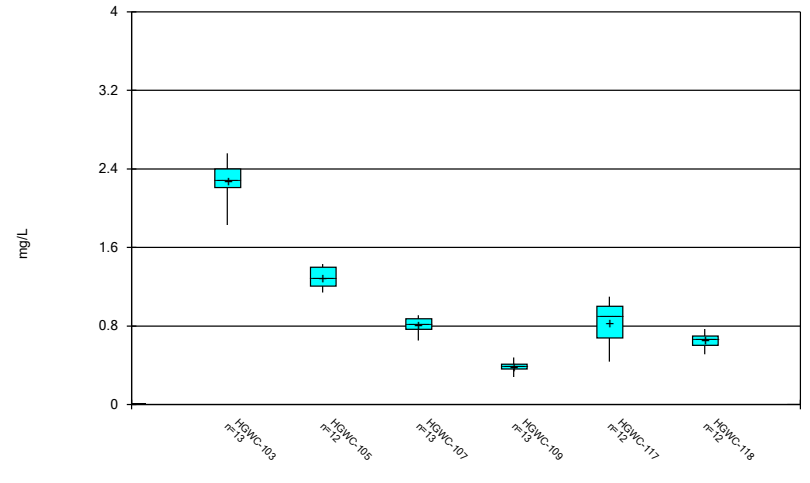
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



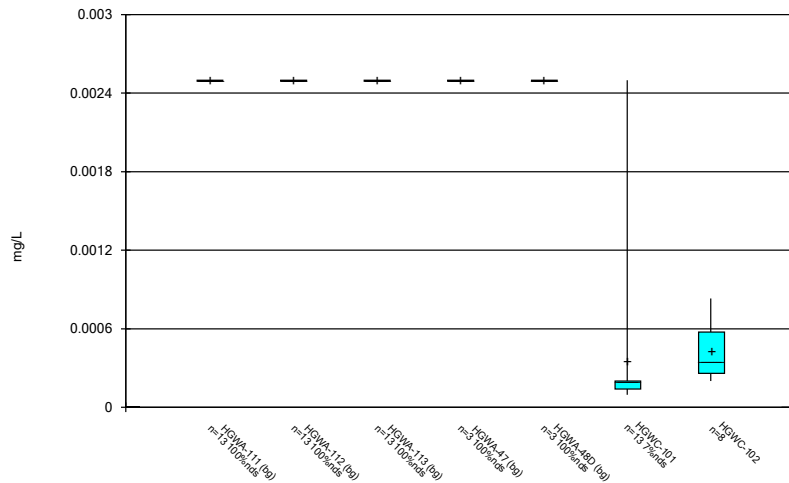
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



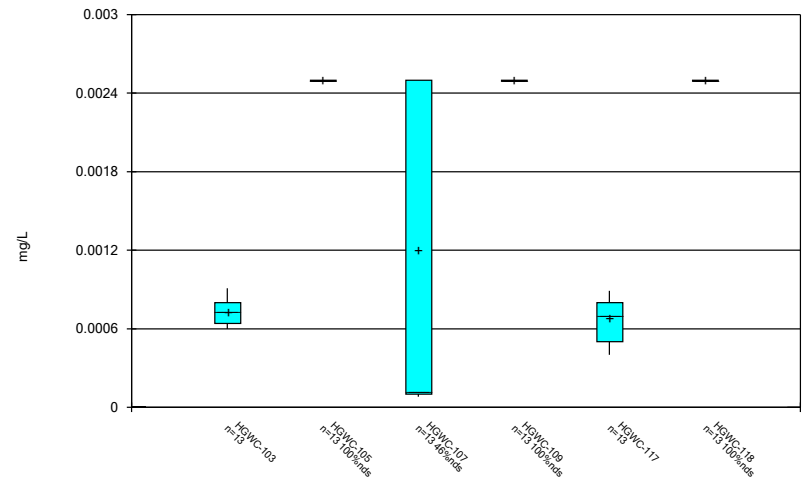
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



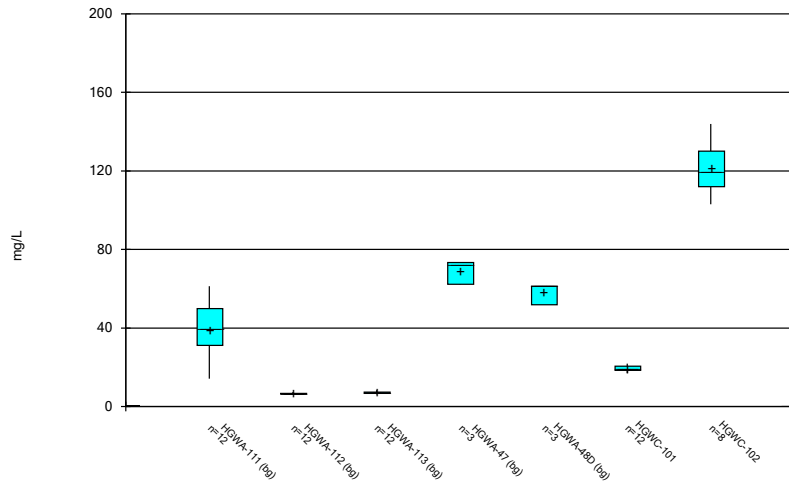
Constituent: Cadmium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



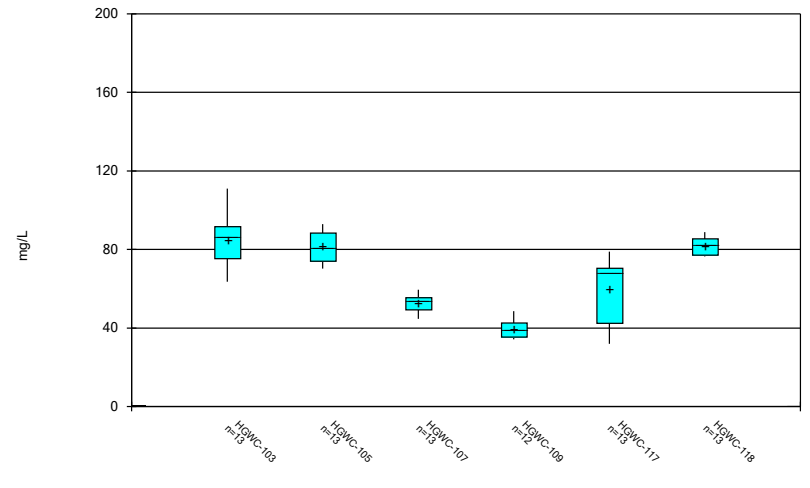
Constituent: Cadmium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



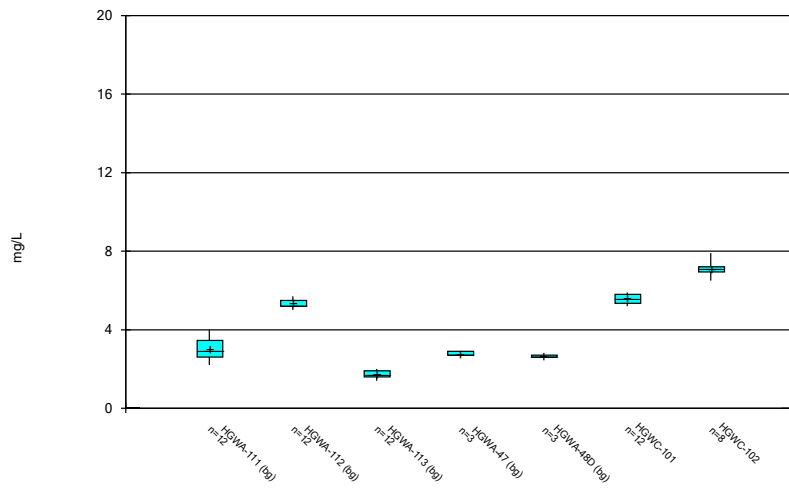
Constituent: Calcium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



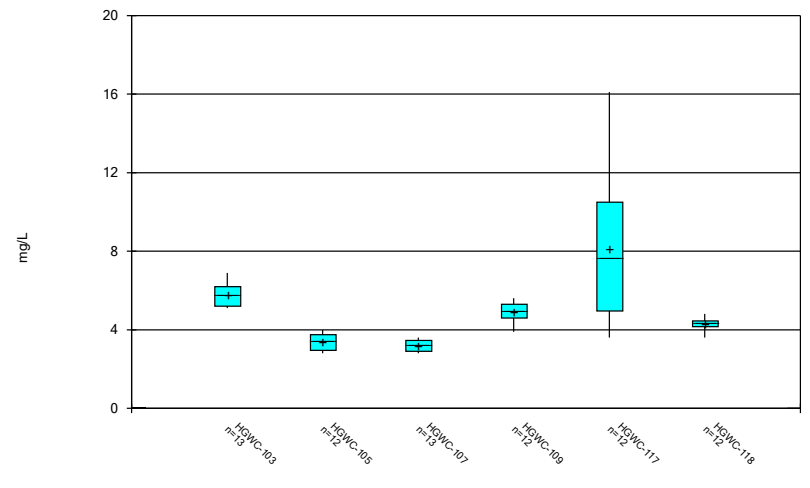
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



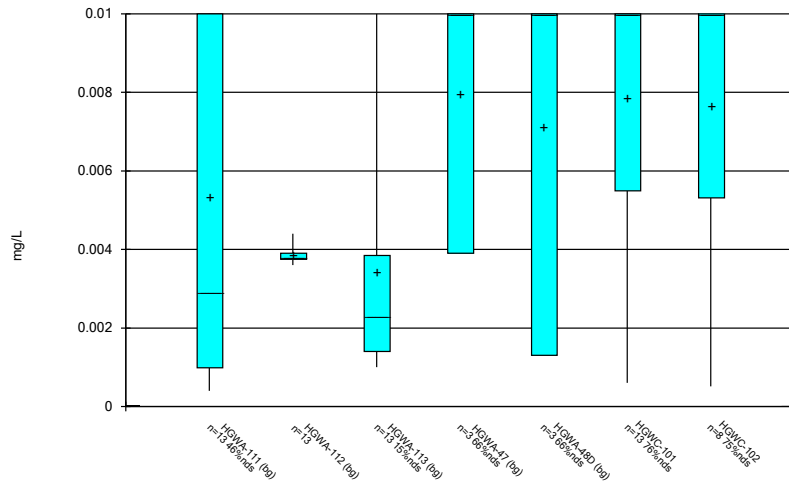
Constituent: Chloride Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



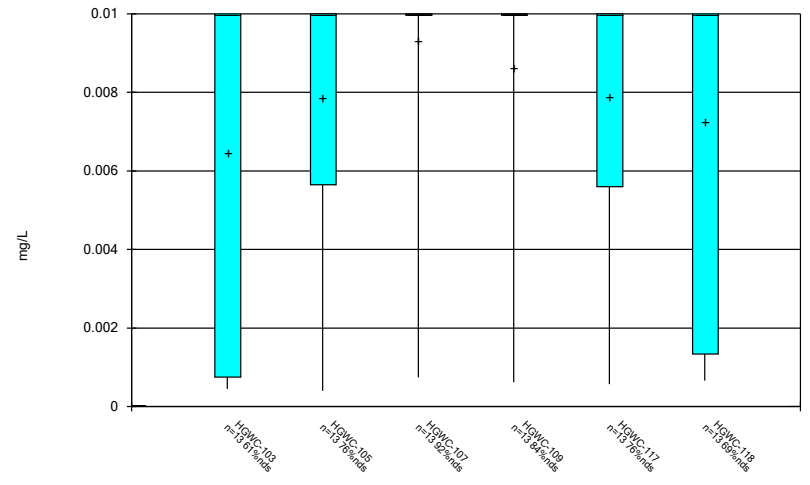
Constituent: Chloride Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



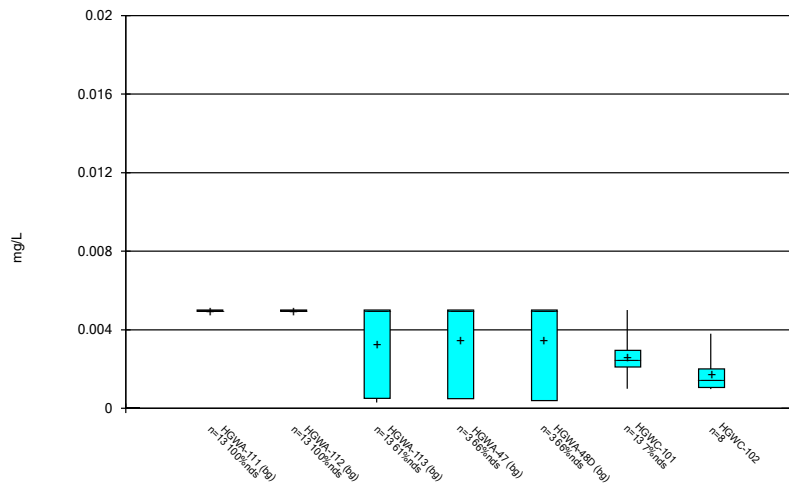
Constituent: Chromium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



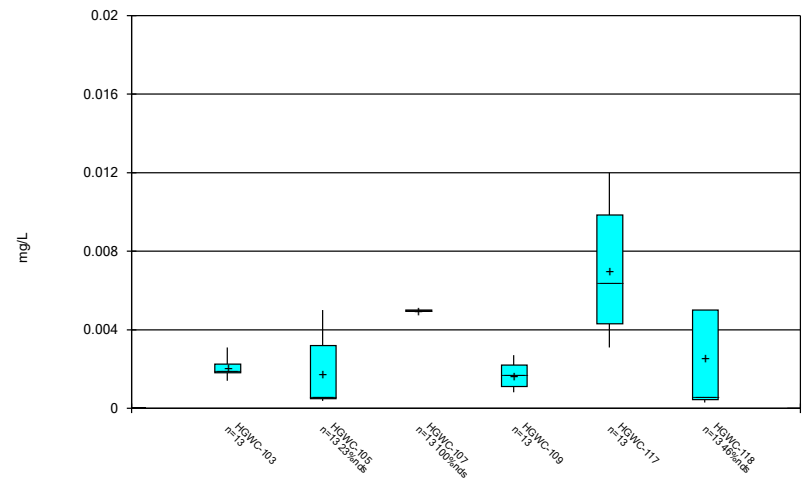
Constituent: Chromium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



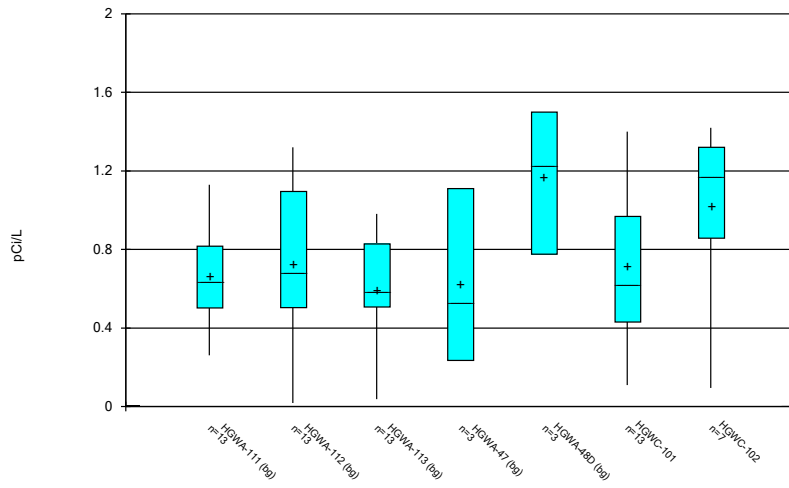
Constituent: Cobalt Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



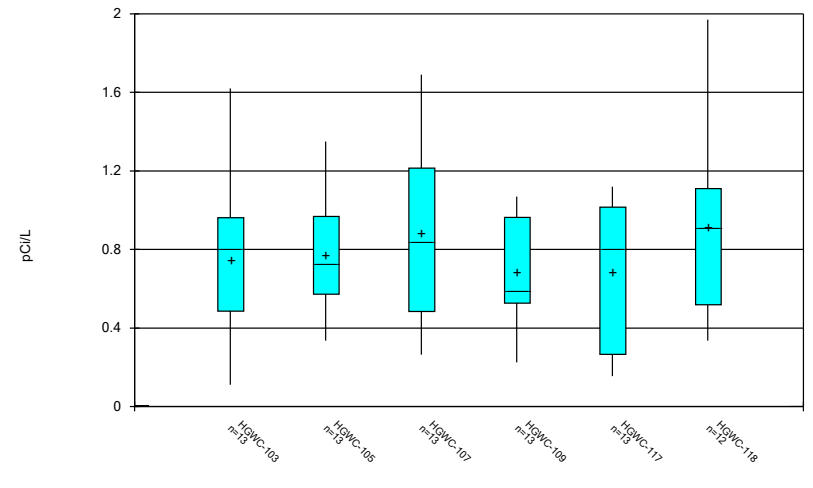
Constituent: Cobalt Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



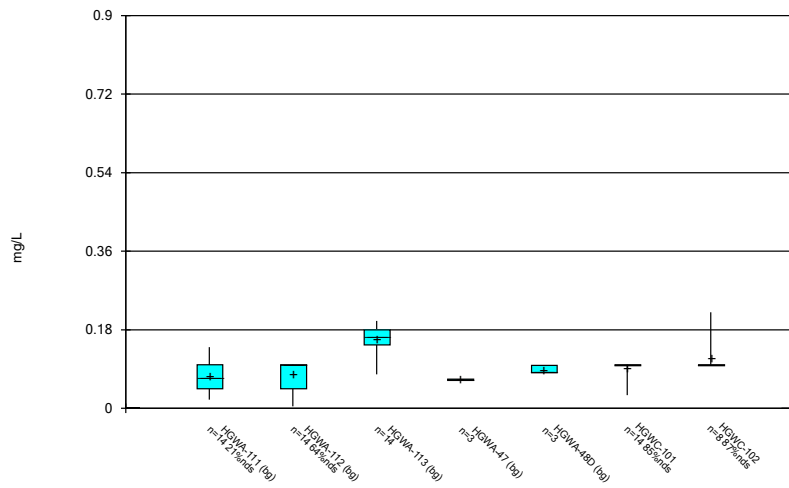
Constituent: Combined Radium 226 & 228 Analysis Run 2/17/2021 1:34 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



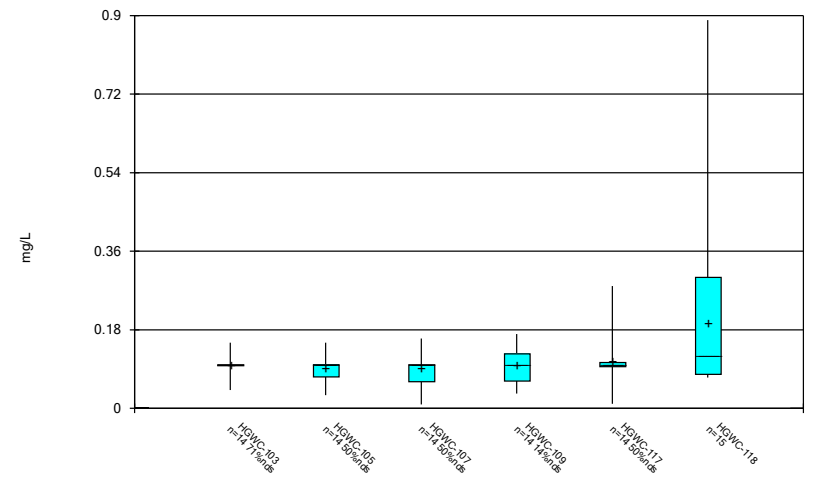
Constituent: Combined Radium 226 & 228 Analysis Run 2/17/2021 1:34 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



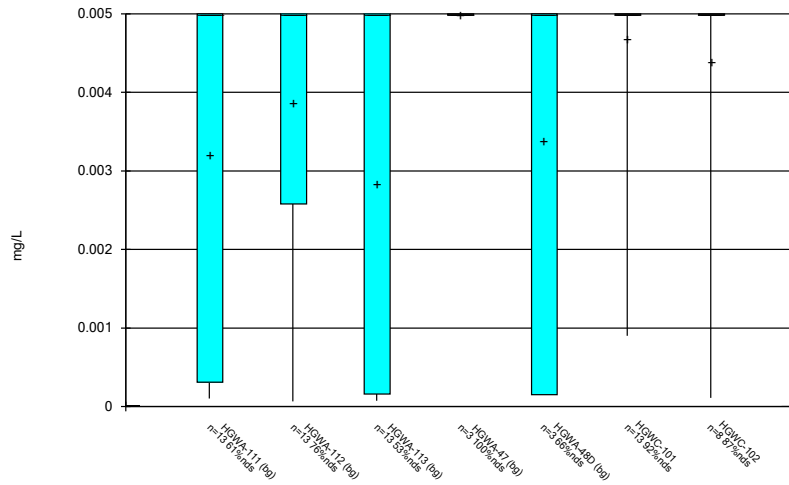
Constituent: Fluoride Analysis Run 2/17/2021 1:34 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



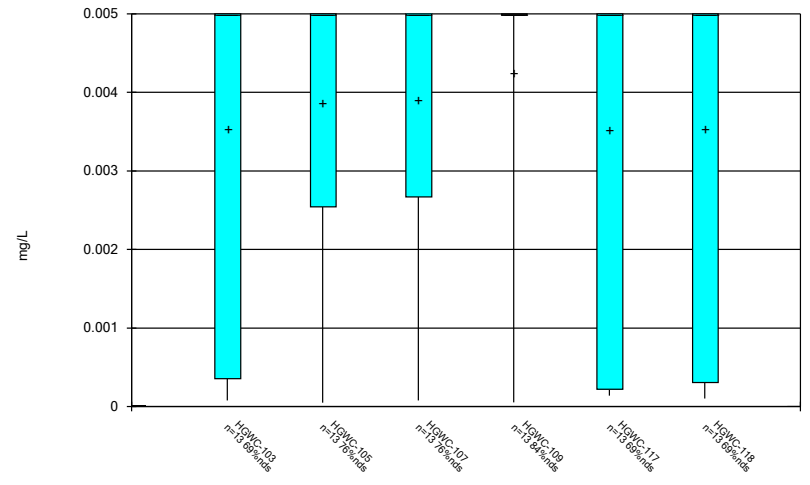
Constituent: Fluoride Analysis Run 2/17/2021 1:34 PM
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



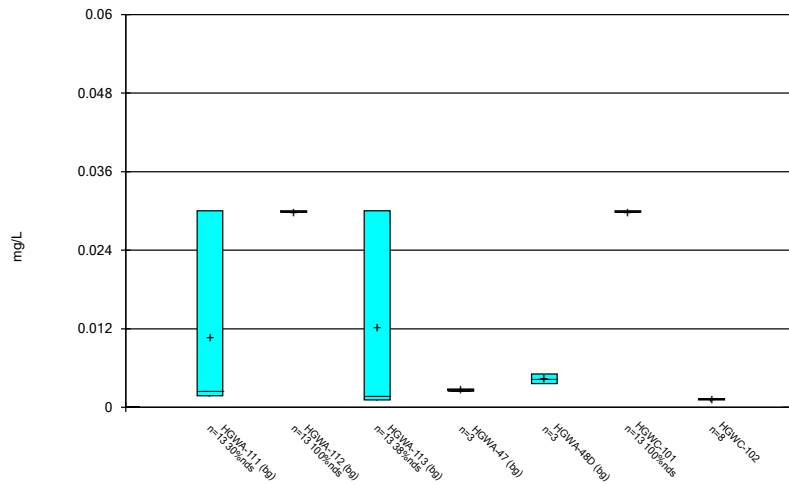
Constituent: Lead Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



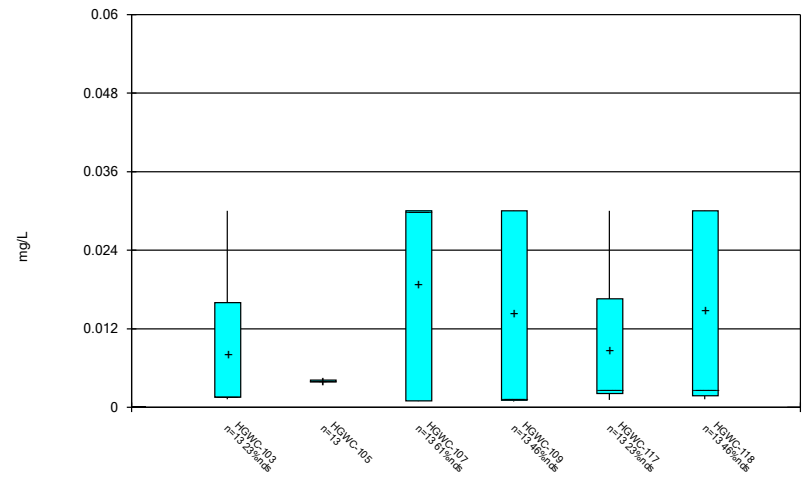
Constituent: Lead Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



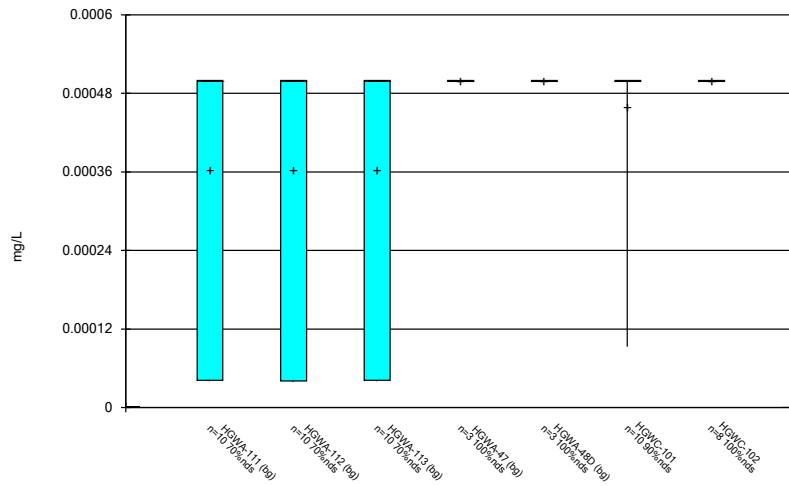
Constituent: Lithium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



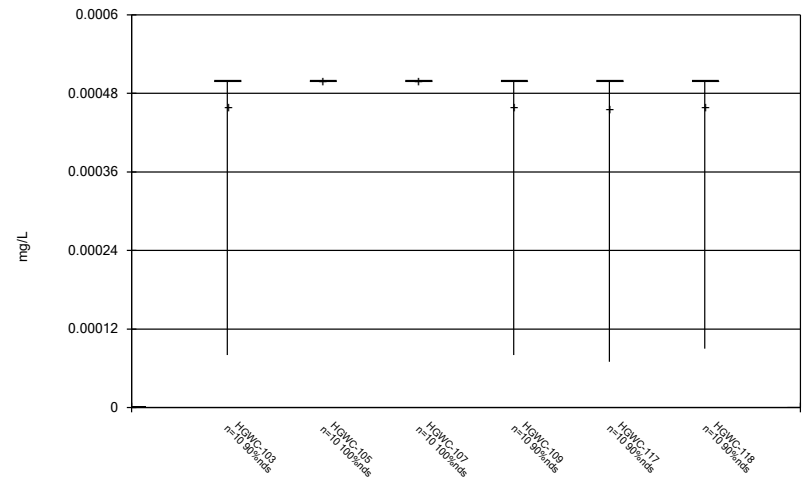
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



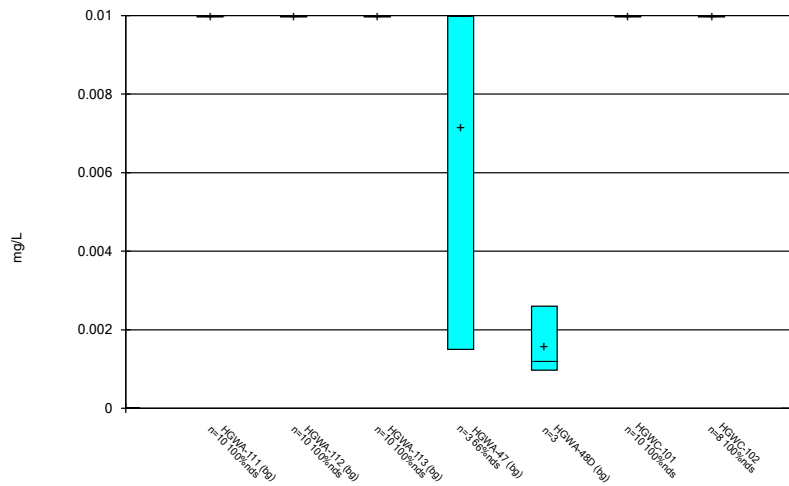
Constituent: Mercury Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



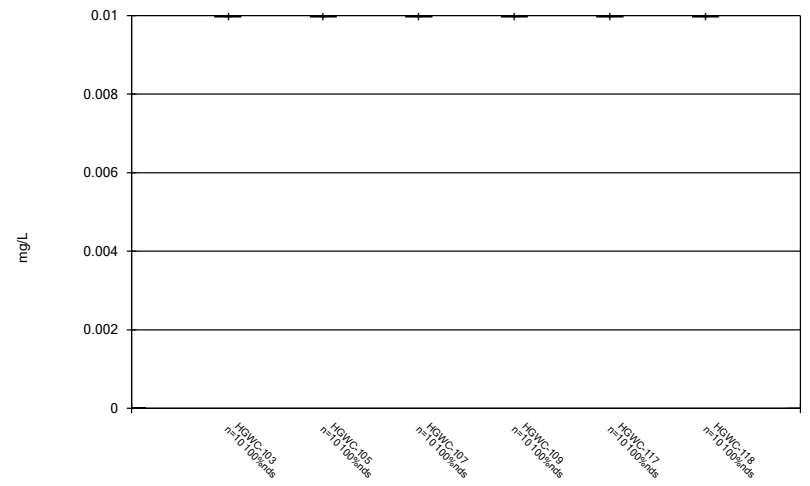
Constituent: Mercury Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



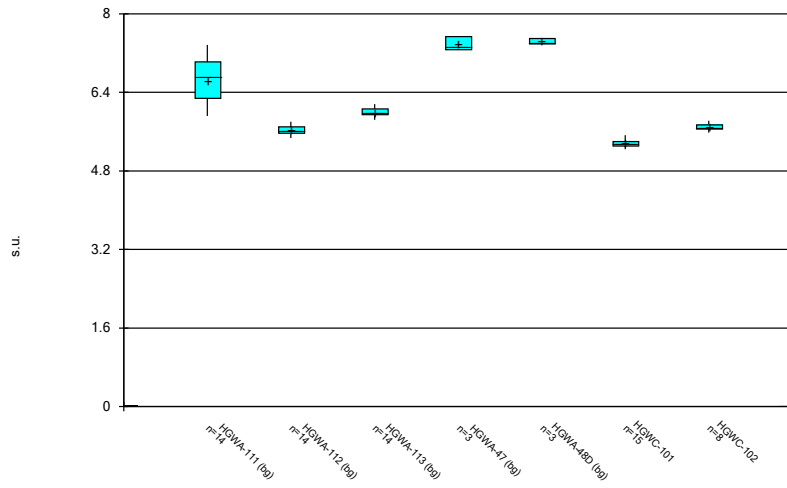
Constituent: Molybdenum Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



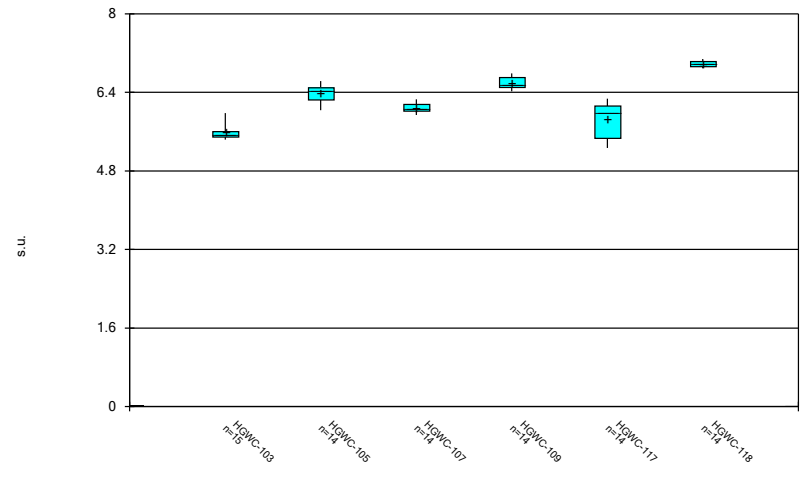
Constituent: Molybdenum Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



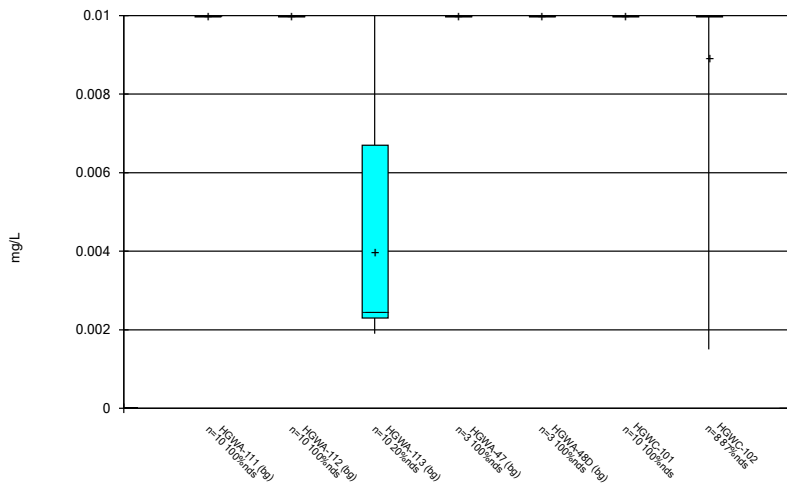
Constituent: pH Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



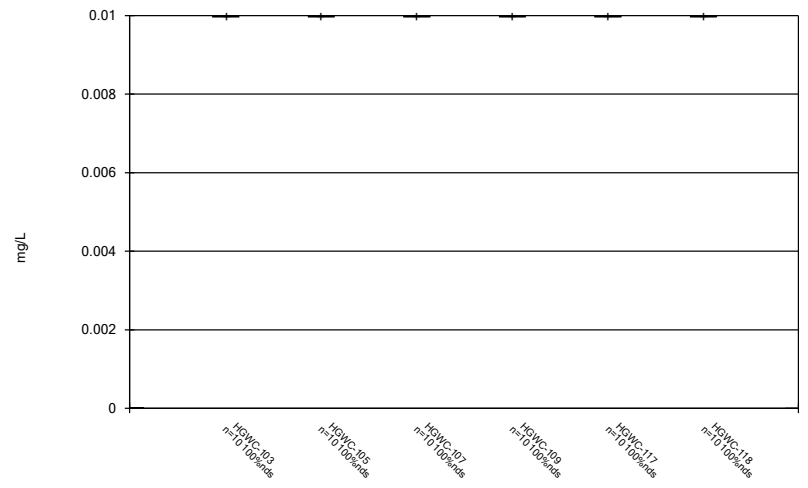
Constituent: pH Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



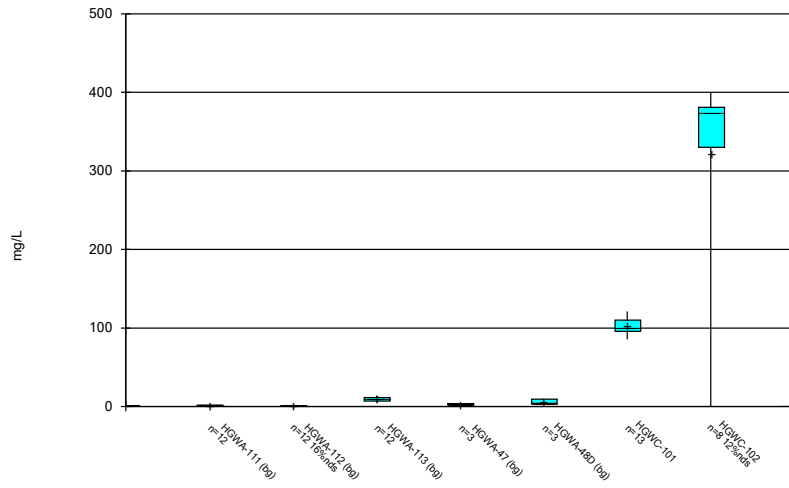
Constituent: Selenium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



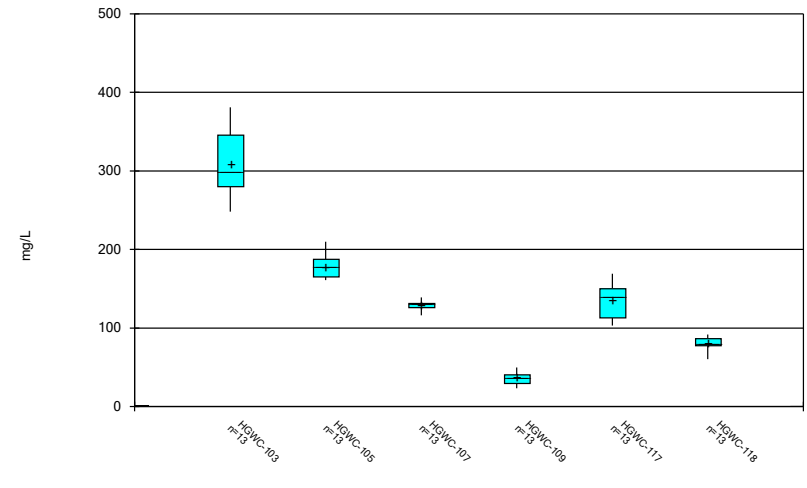
Constituent: Selenium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



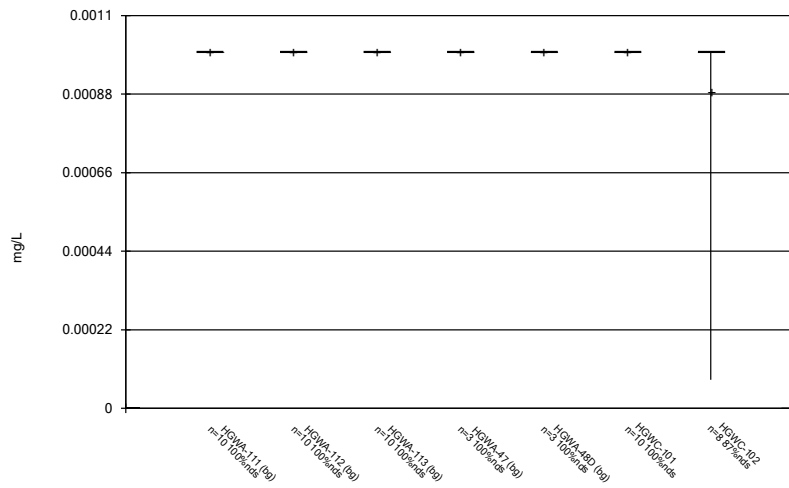
Constituent: Sulfate Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



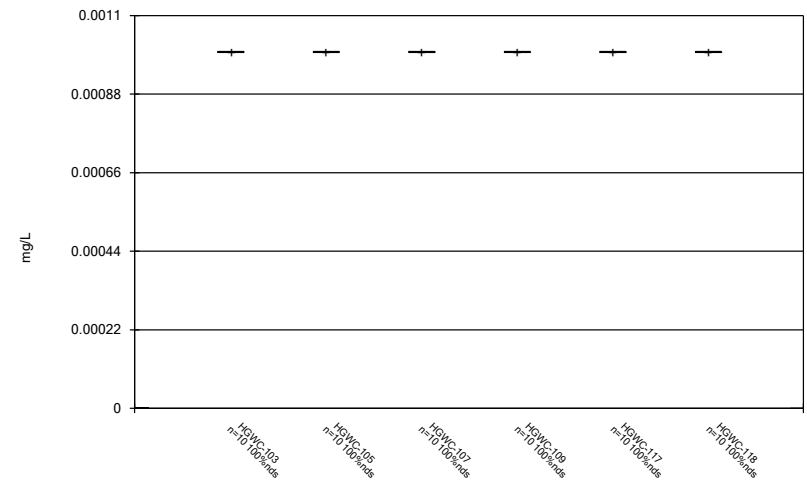
Constituent: Sulfate Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



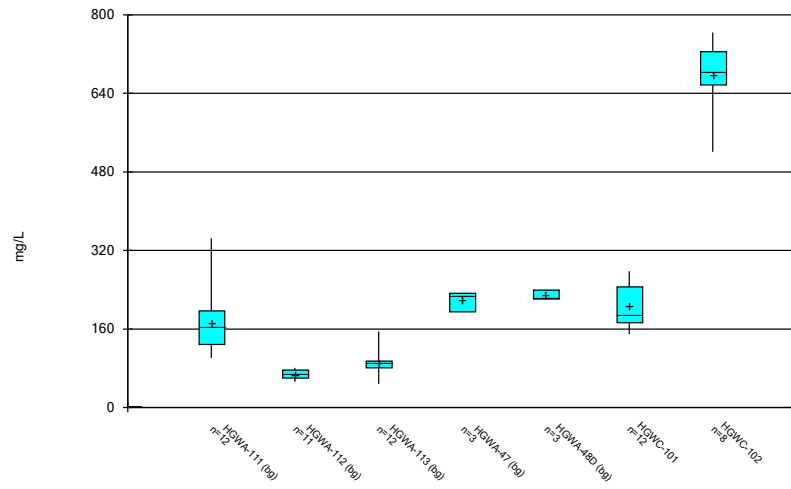
Constituent: Thallium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



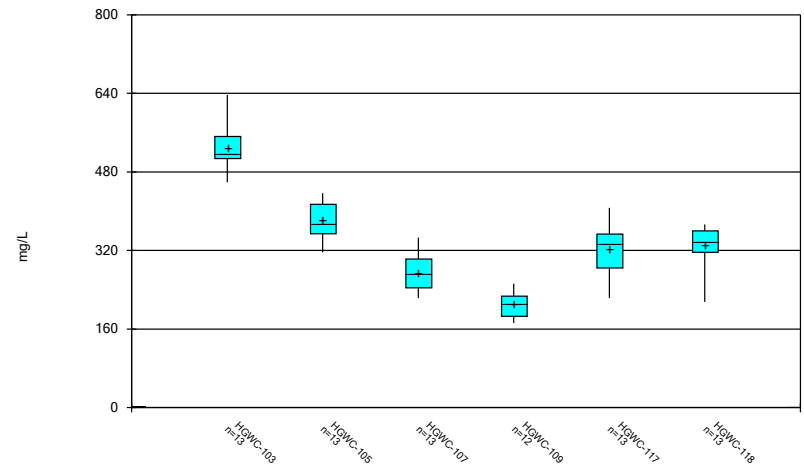
Constituent: Thallium Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 2/17/2021 1:34 PM
 Plant Hammond Client: Southern Company Data: Hammond AP-4

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

HQWA-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

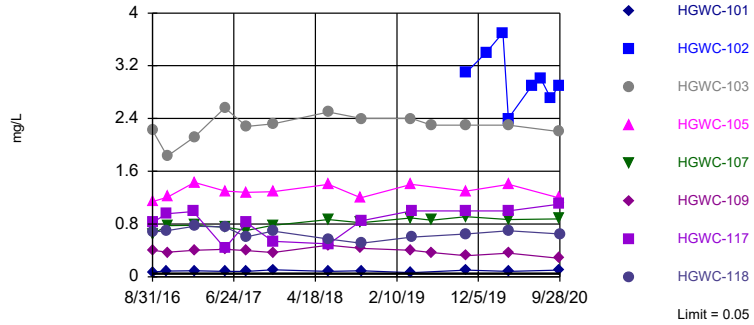
Interwell Prediction Limits - All Results

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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	

Exceeds Limit: HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Prediction Limit
Interwell Non-parametric

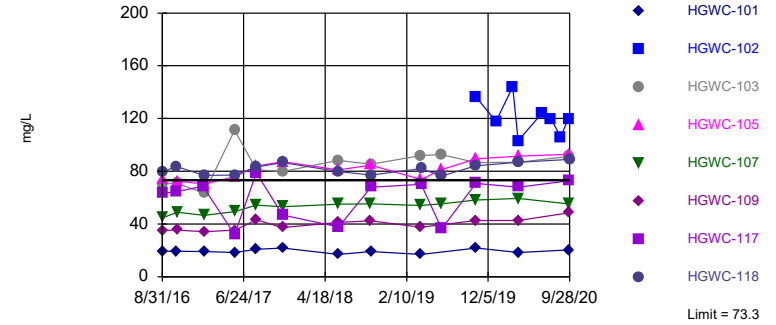


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. 16.67% NDs. Annual per-constituent alpha = 0.01653. Individual comparison alpha = 0.001041 (1 of 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

Exceeds Limit: HGWC-102, HGWC-103, HGWC-105, HGWC-118

Prediction Limit
Interwell Non-parametric

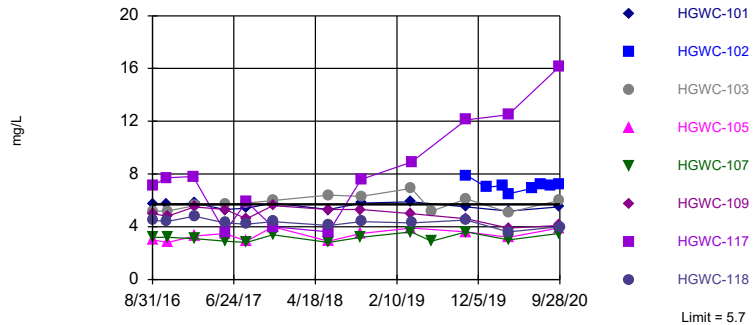


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. Annual per-constituent alpha = 0.01653. Individual comparison alpha = 0.001041 (1 of 2). Comparing 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

Exceeds Limit: HGWC-102, HGWC-103, HGWC-117

Prediction Limit
Interwell Non-parametric

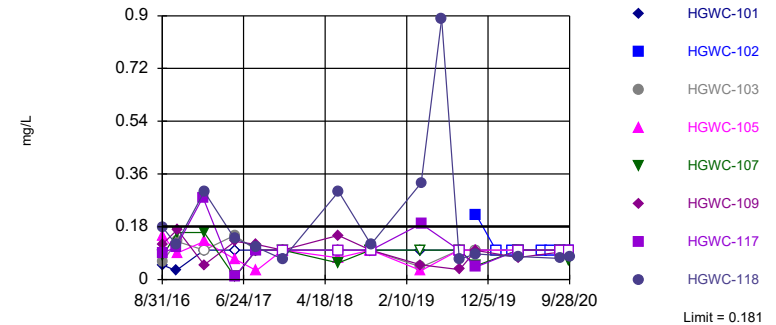


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. Annual per-constituent alpha = 0.01653. Individual comparison alpha = 0.001041 (1 of 2). Comparing 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

Within Limit

Prediction Limit
Interwell Parametric

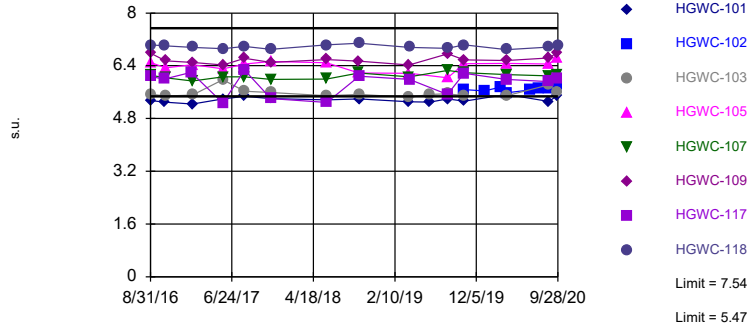


Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.0799, Std. Dev.=0.05086, n=48, 25% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9437, critical = 0.929. Kappa = 1.988 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. 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

Within Limits

Prediction Limit
Interwell Non-parametric

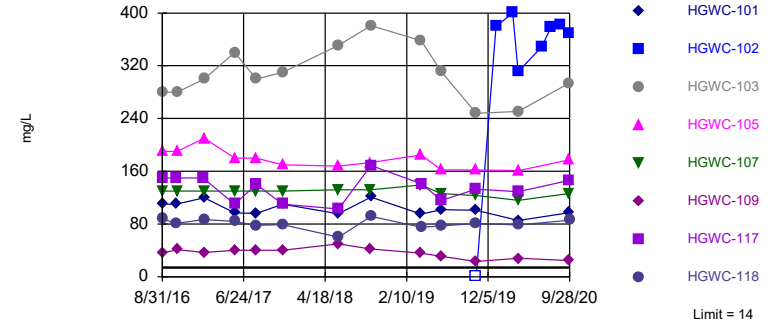


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 48 background values. Annual per-constituent alpha = 0.02581. Individual comparison alpha = 0.001623 (1 of 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

Exceeds Limit: HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Prediction Limit
Interwell Non-parametric

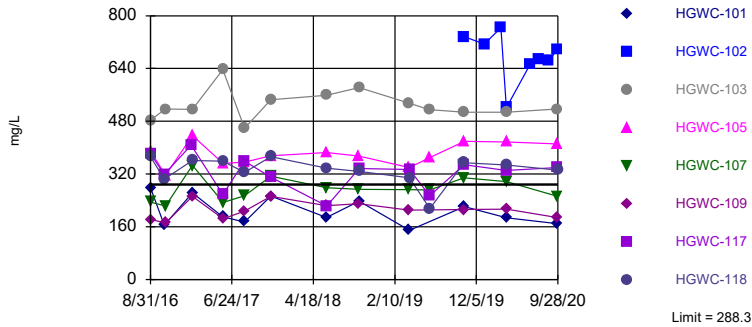


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. 4.762% NDs. Annual per-constituent alpha = 0.01653. Individual comparison alpha = 0.001041 (1 of 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

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

	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

	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

	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

	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

	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

	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

	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

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-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

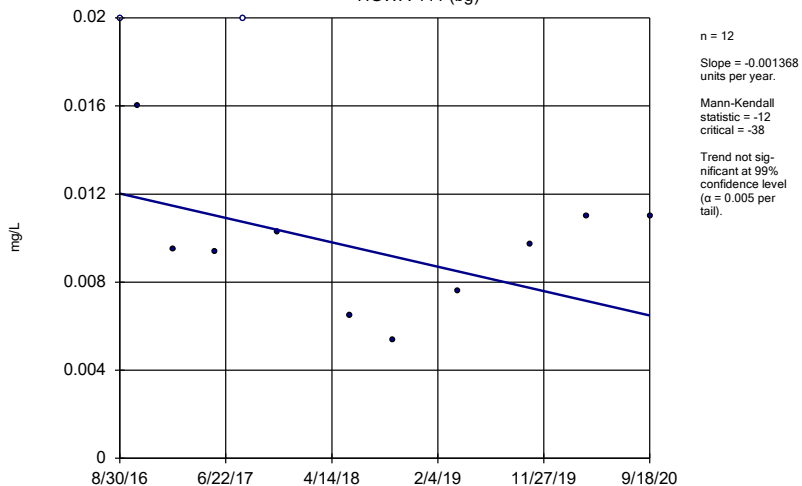
Trend Tests - Prediction Limit Exceedances - All Results

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

Sen's Slope Estimator

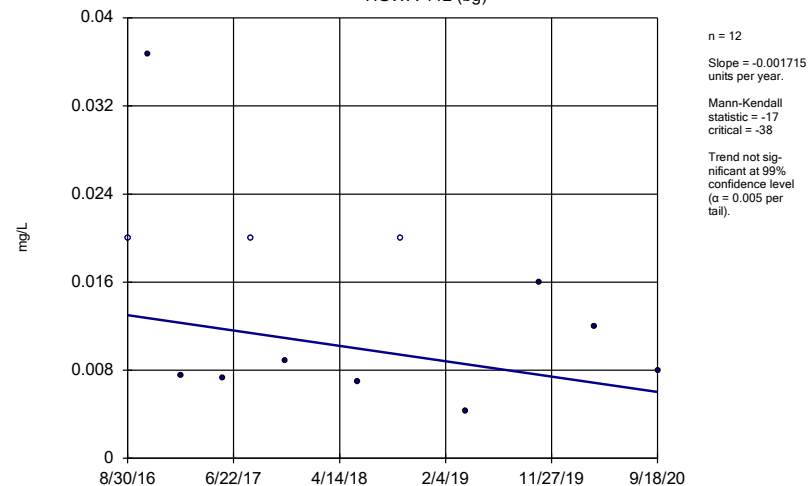
HGWA-111 (bg)



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

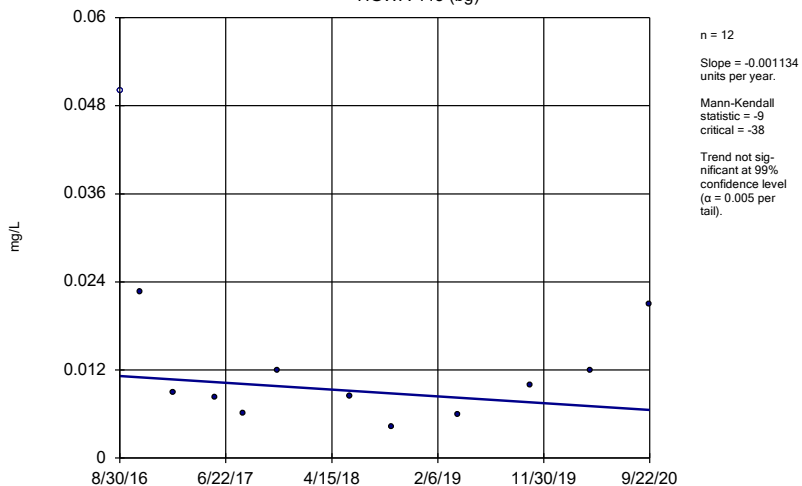
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Sen's Slope Estimator

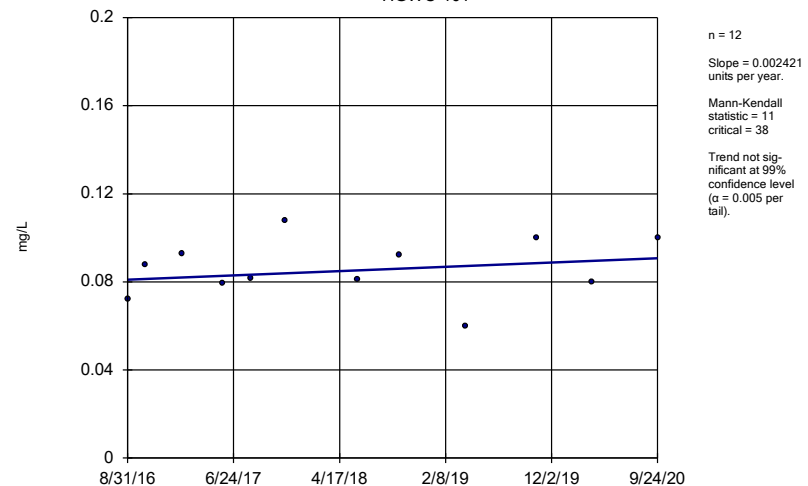
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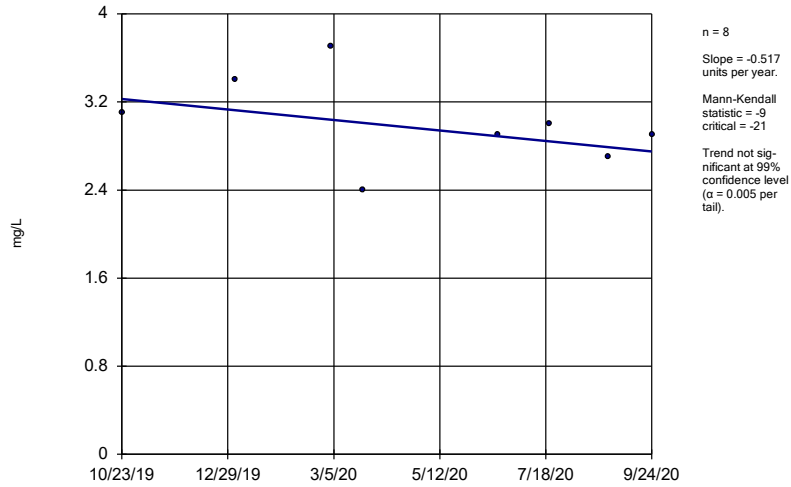
Sen's Slope Estimator

HGWC-101



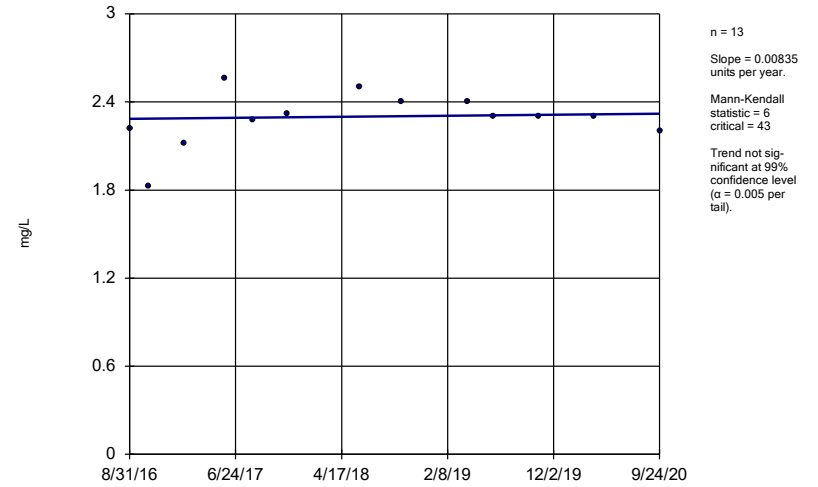
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Sen's Slope Estimator
HGWC-102



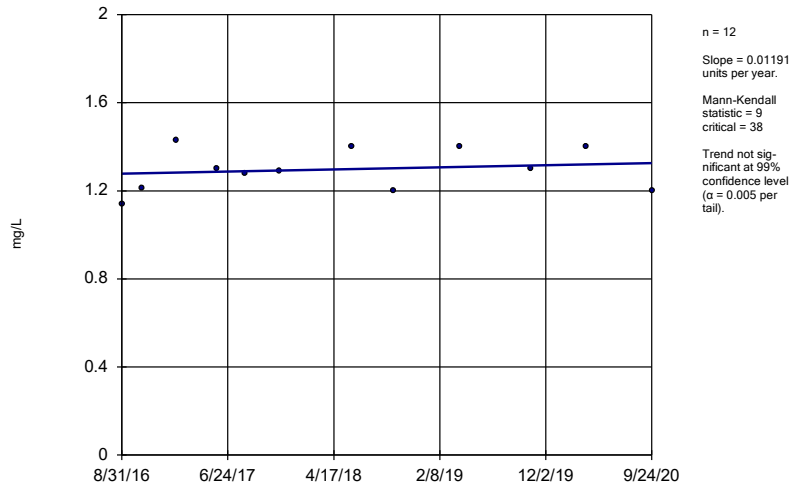
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Sen's Slope Estimator
HGWC-103



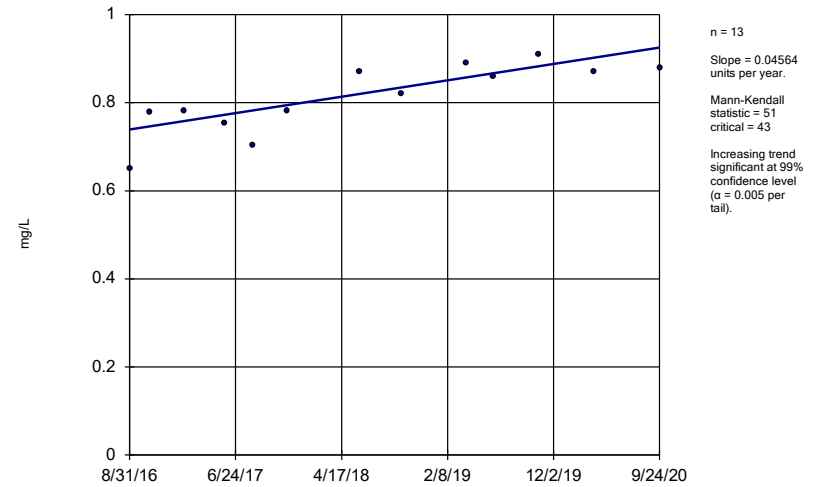
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Sen's Slope Estimator
HGWC-105



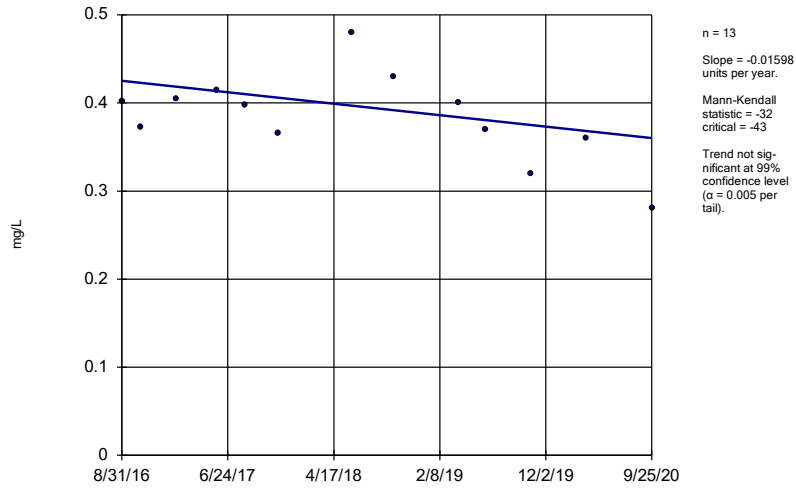
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Sen's Slope Estimator
HGWC-107



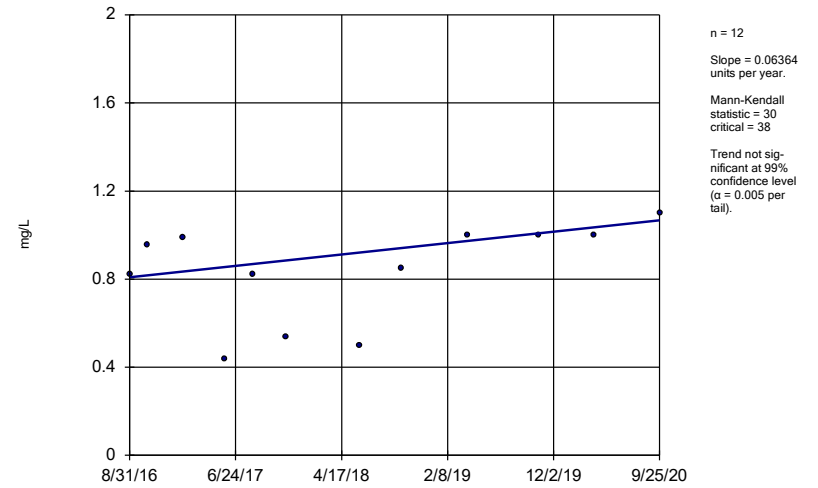
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Sen's Slope Estimator HGWC-109



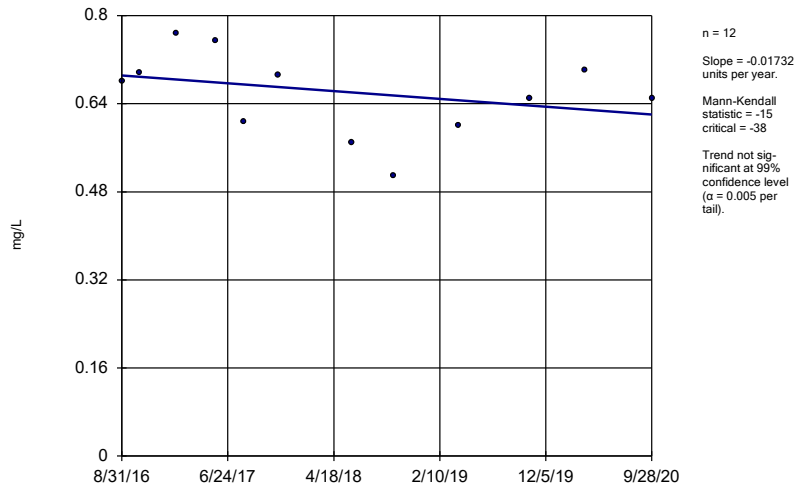
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Sen's Slope Estimator HGWC-117



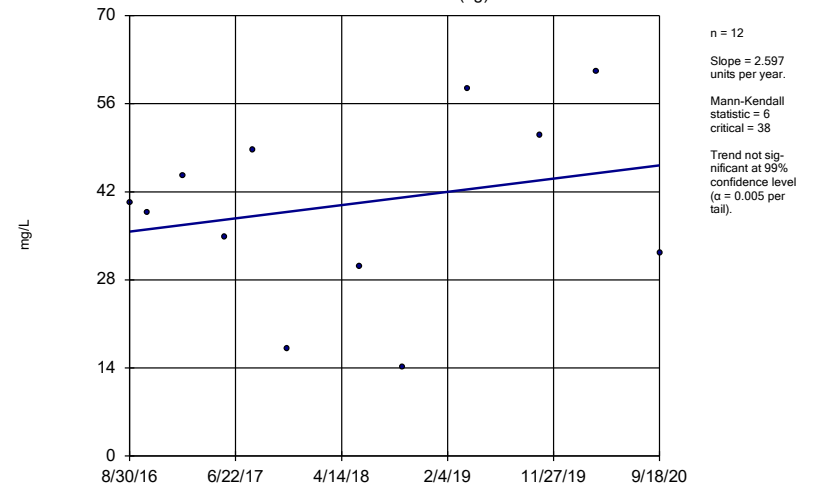
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Sen's Slope Estimator HGWC-118



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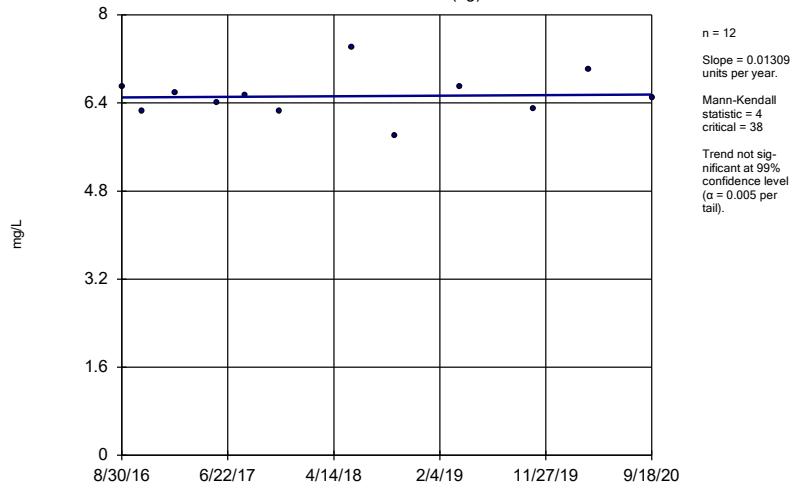
Sen's Slope Estimator HGWA-111 (bg)



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Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

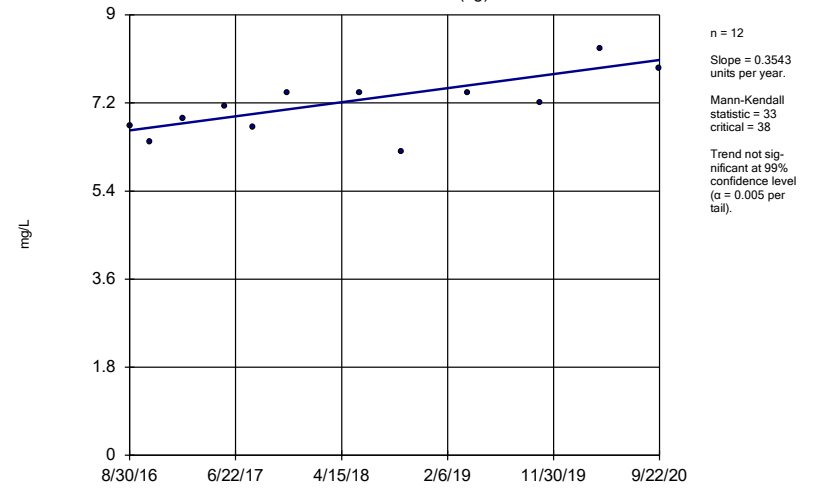
HGWA-112 (bg)



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Sen's Slope Estimator

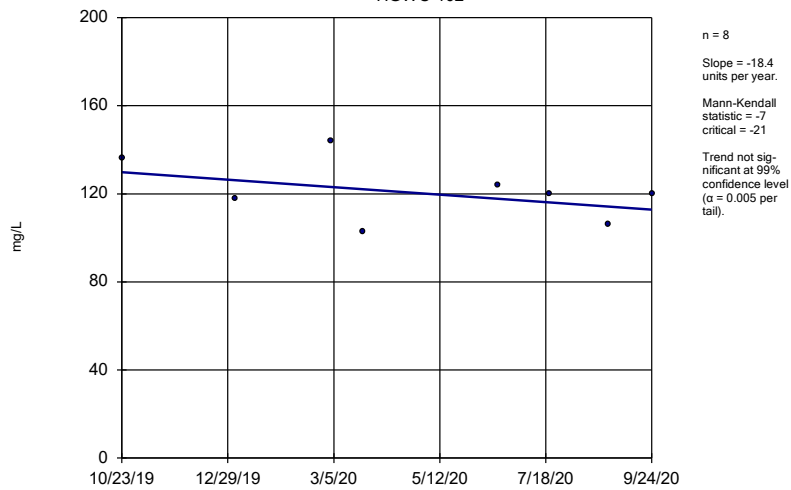
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Sen's Slope Estimator

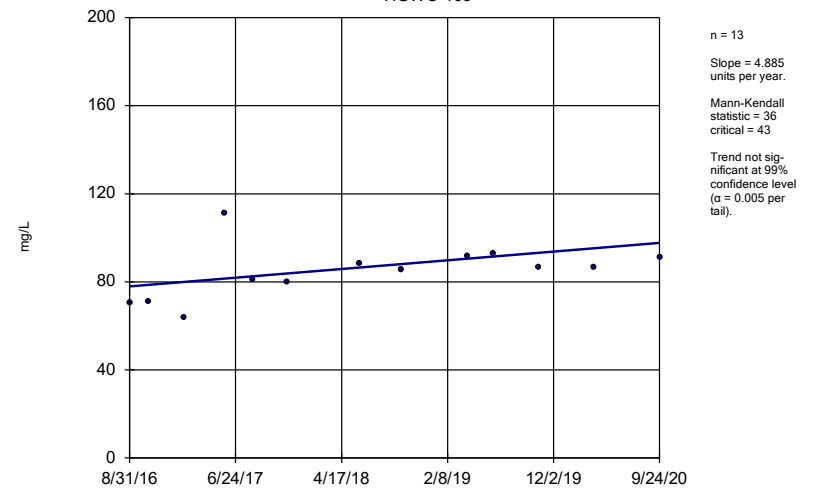
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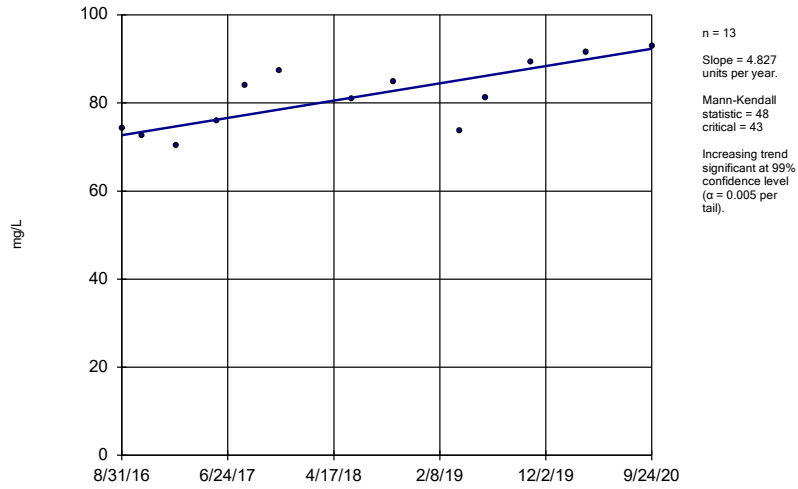
Sen's Slope Estimator

HGWC-103



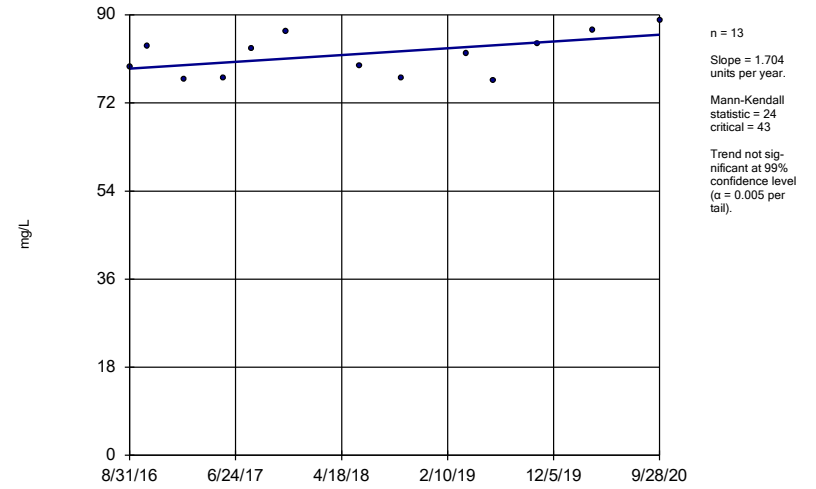
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator
HGWC-105



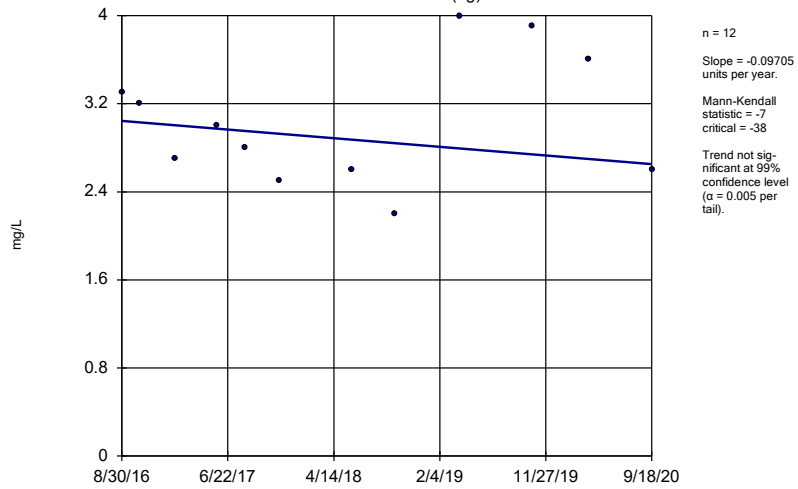
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Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator
HGWC-118



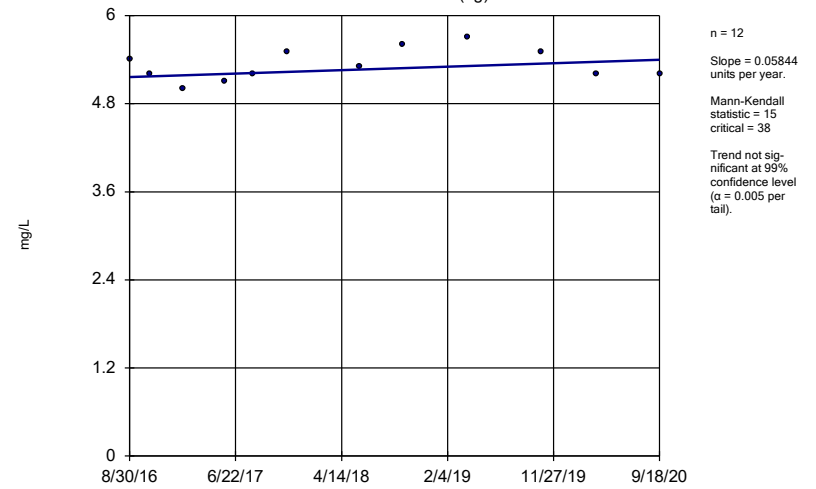
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Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator
HGWA-111 (bg)



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Plant Hammond Client: Southern Company Data: Hammond AP-4

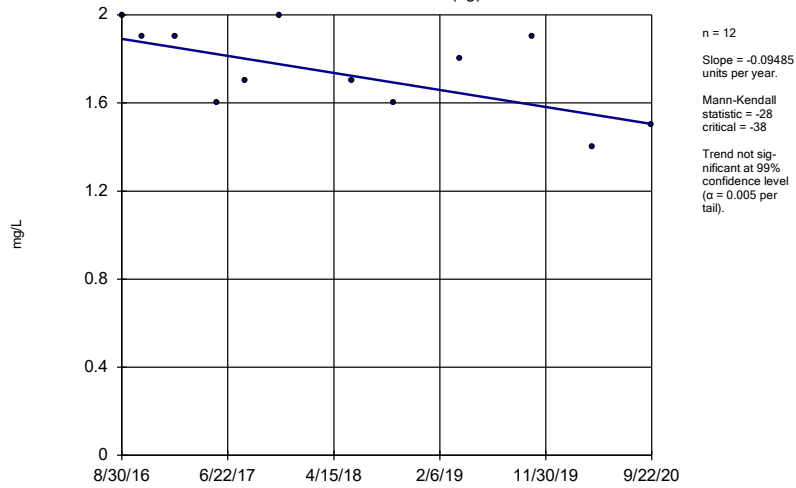
Sen's Slope Estimator
HGWA-112 (bg)



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Sen's Slope Estimator

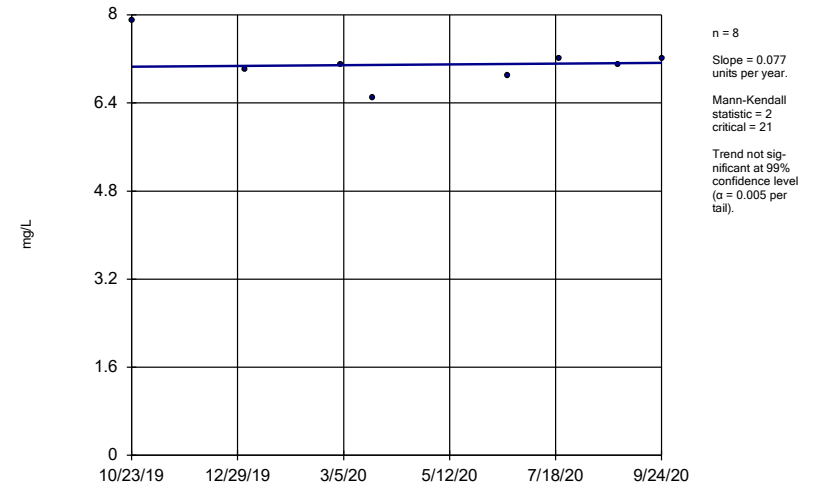
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Sen's Slope Estimator

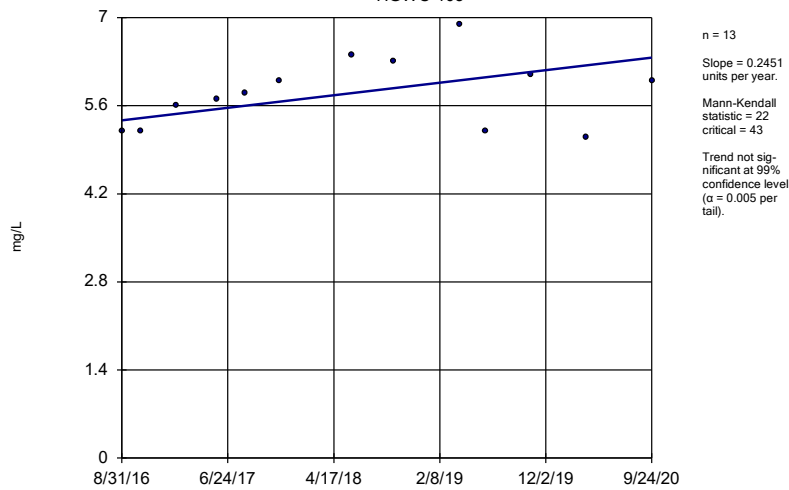
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Sen's Slope Estimator

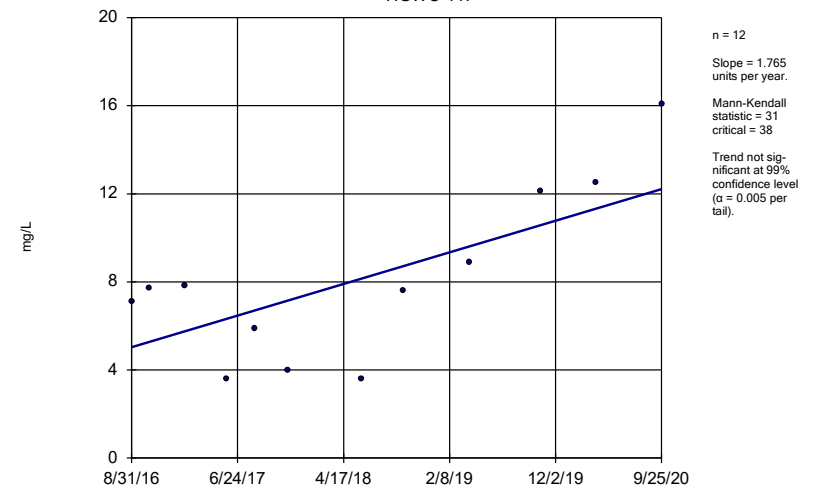
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

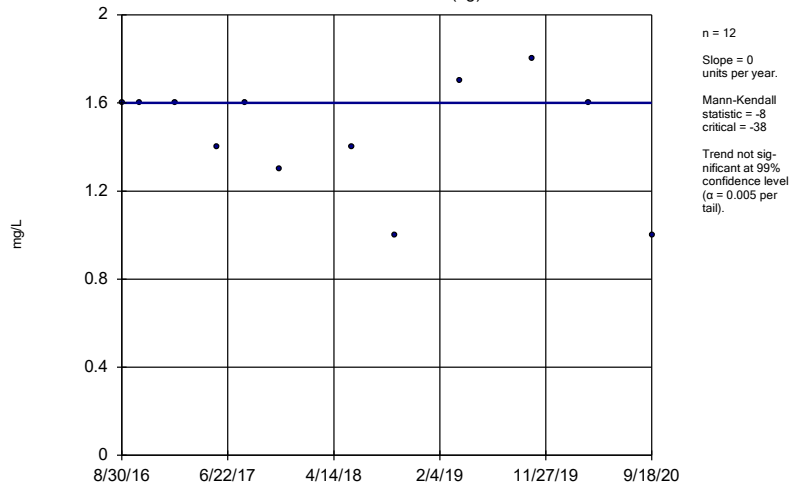
HGWC-117



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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-111 (bg)

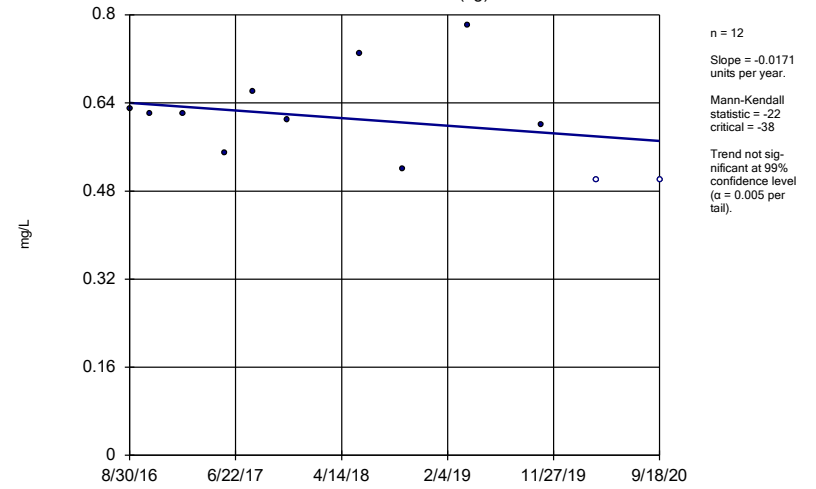


Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Hollow symbols indicate censored values.

Sen's Slope Estimator

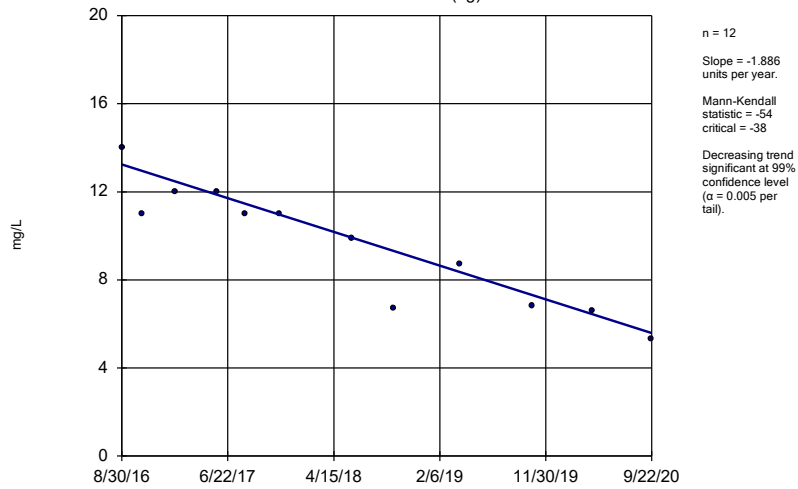
HGWA-112 (bg)



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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

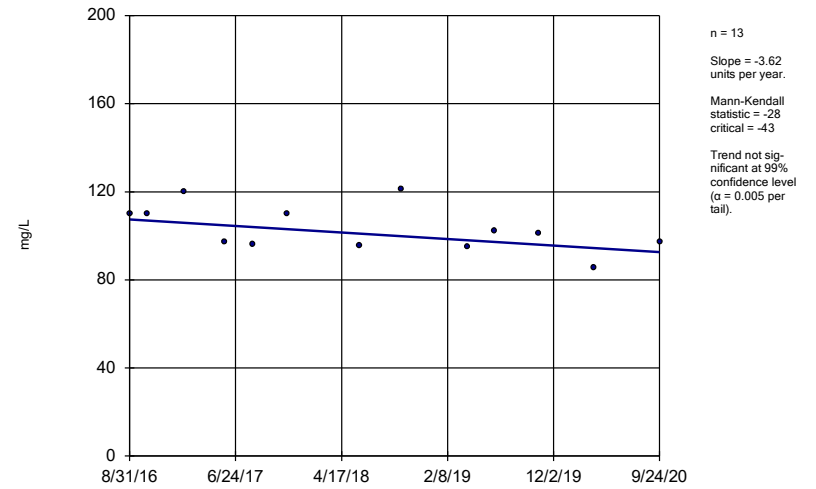
HGWA-113 (bg)



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 Plant Hammond Client: Southern Company Data: Hammond AP-4

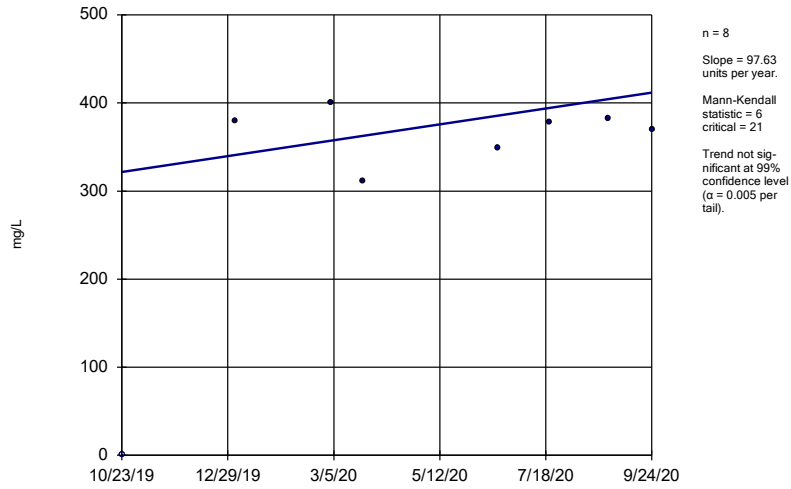
Sen's Slope Estimator

HGWC-101



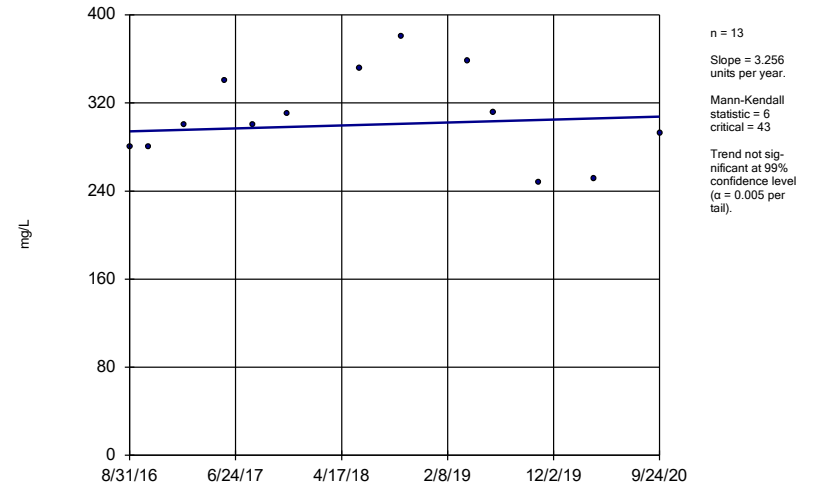
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Sen's Slope Estimator
 HGWC-102



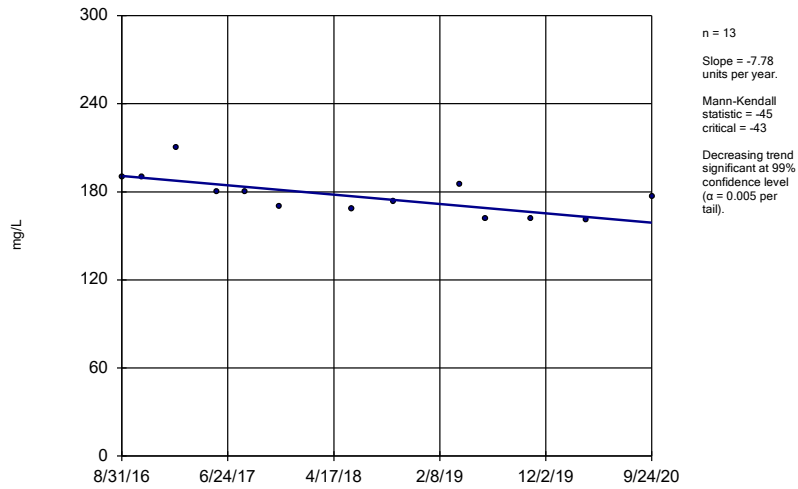
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Sen's Slope Estimator
 HGWC-103



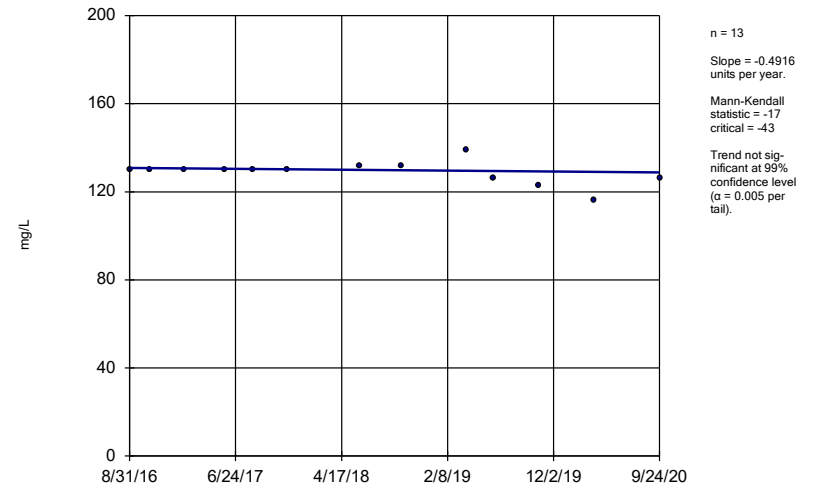
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Sen's Slope Estimator
 HGWC-105



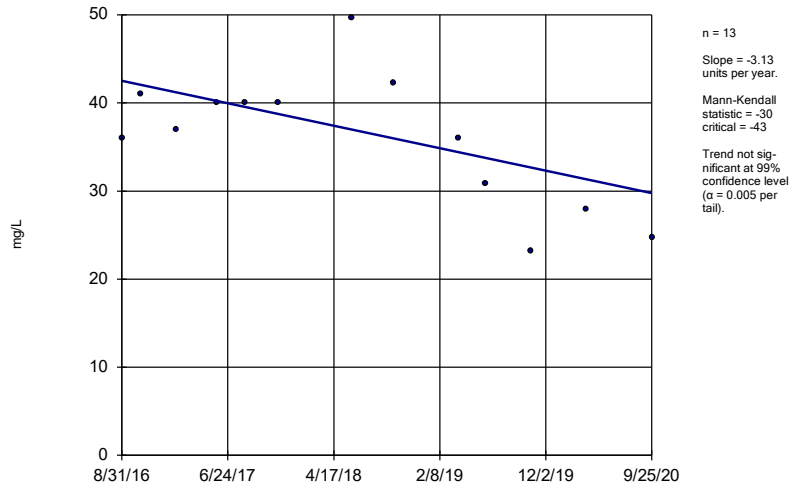
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Sen's Slope Estimator
 HGWC-107



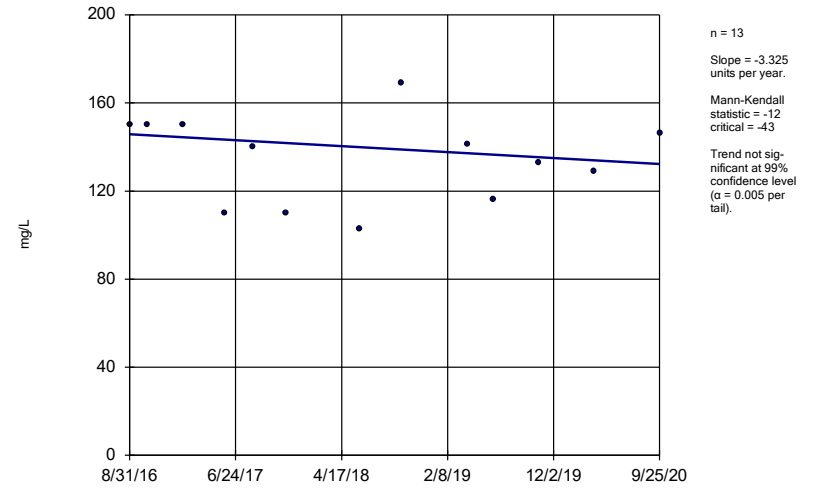
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator
HGWC-109



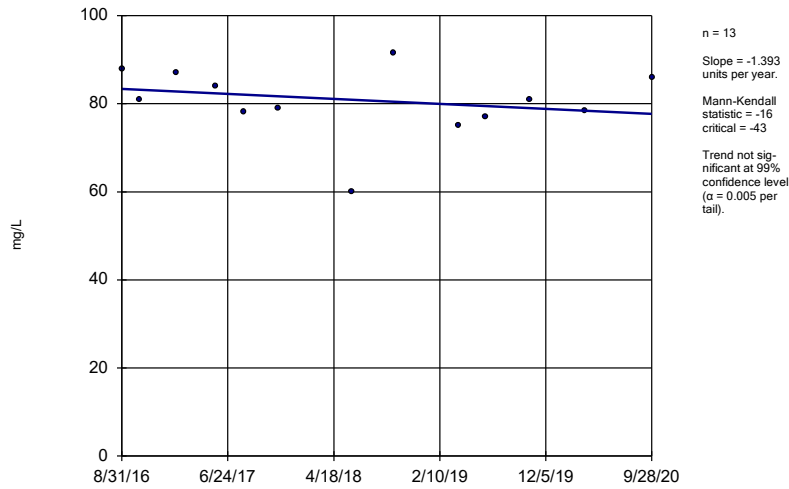
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Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator
HGWC-117



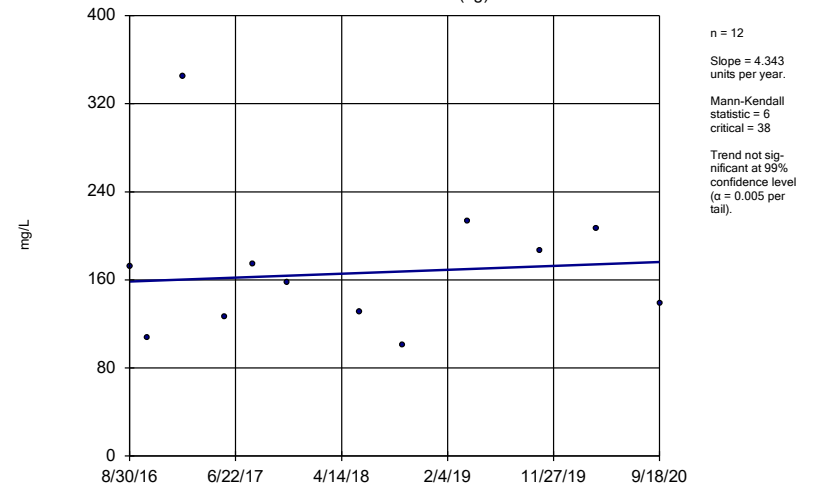
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Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator
HGWC-118



Constituent: Sulfate Analysis Run 2/17/2021 2:55 PM View: Trend Tests
Plant Hammond Client: Southern Company Data: Hammond AP-4

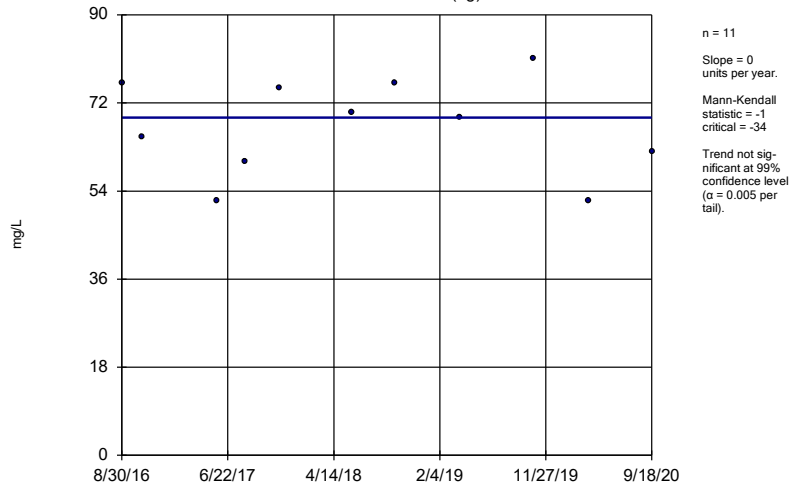
Sen's Slope Estimator
HGWA-111 (bg)



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

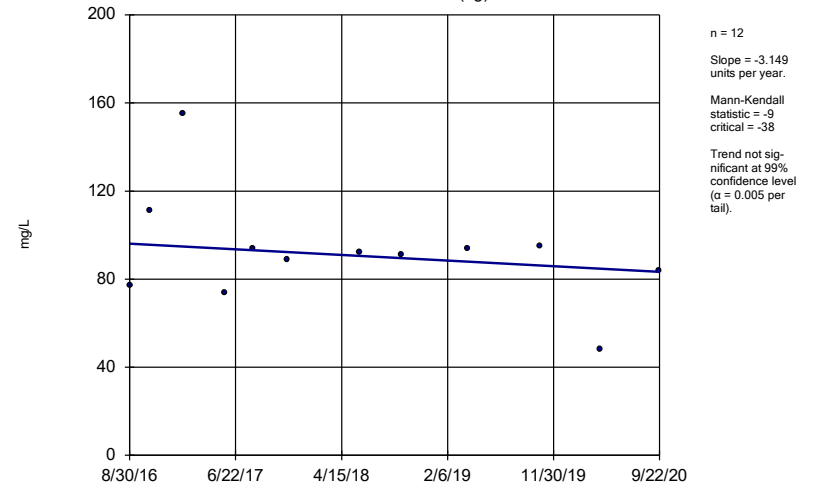
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Sen's Slope Estimator

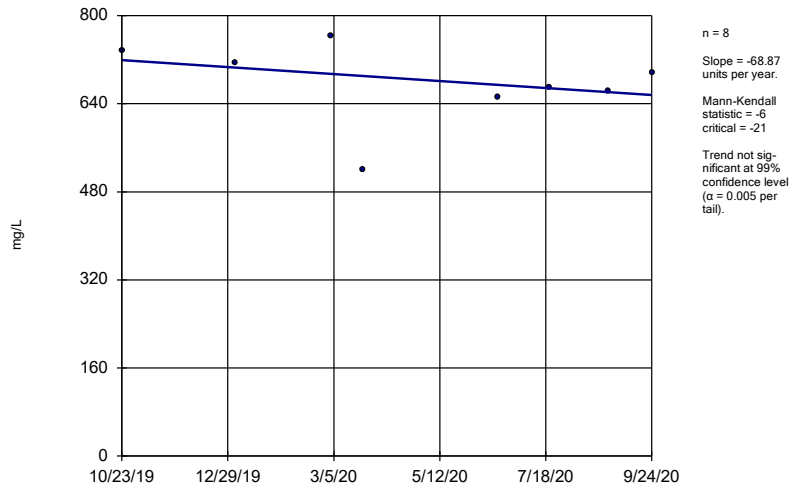
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Sen's Slope Estimator

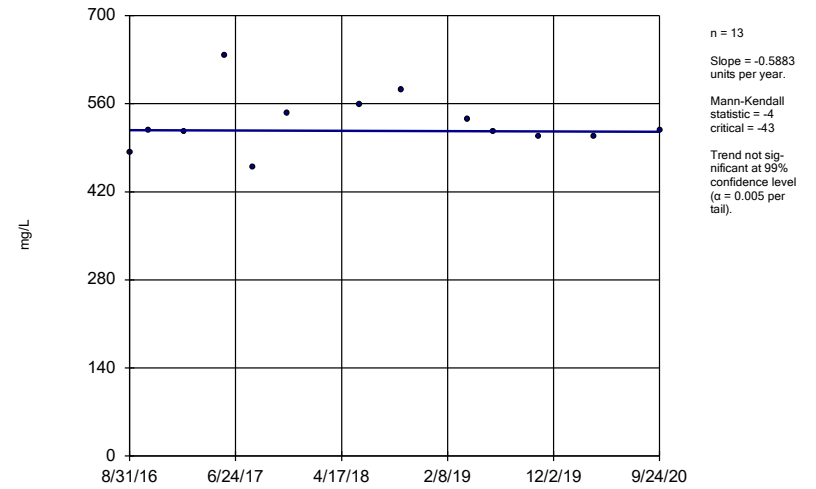
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Sen's Slope Estimator

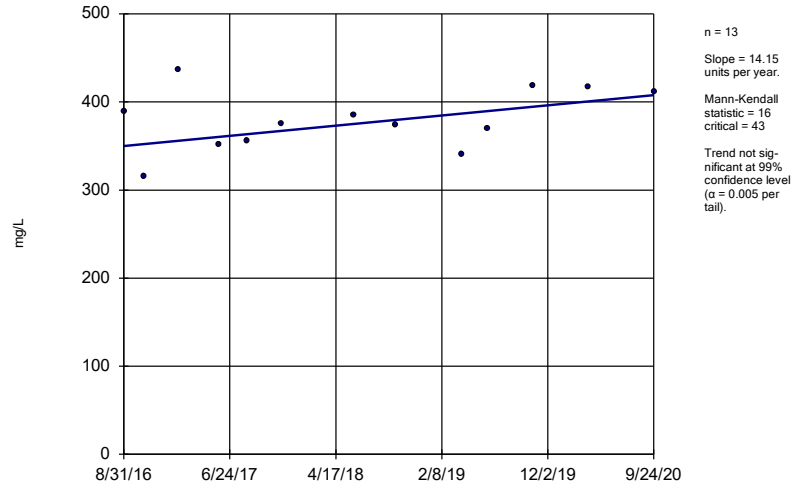
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Sen's Slope Estimator

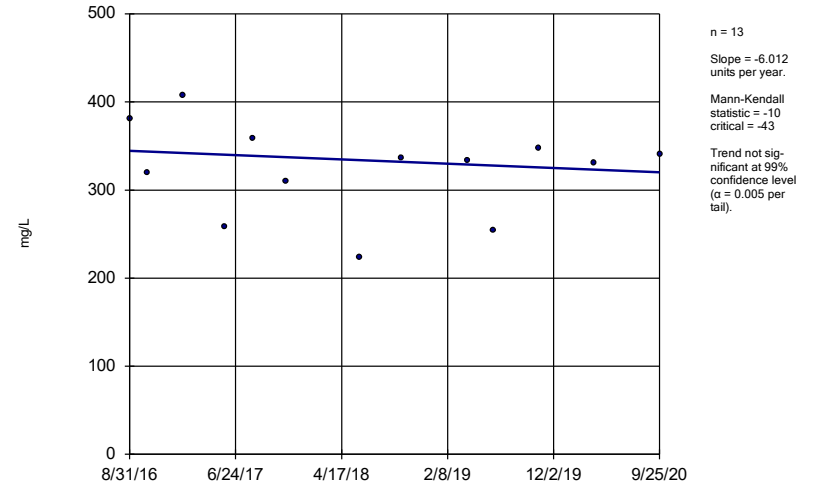
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

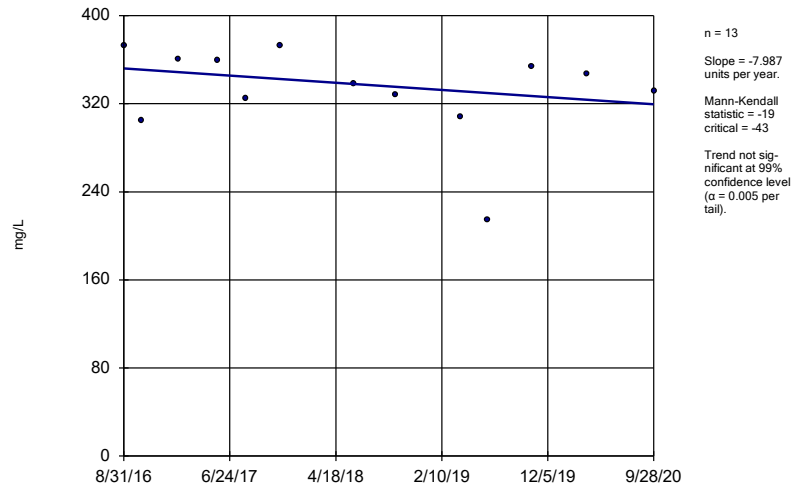
HGWC-117



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-118



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

<u>Constituent</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	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.

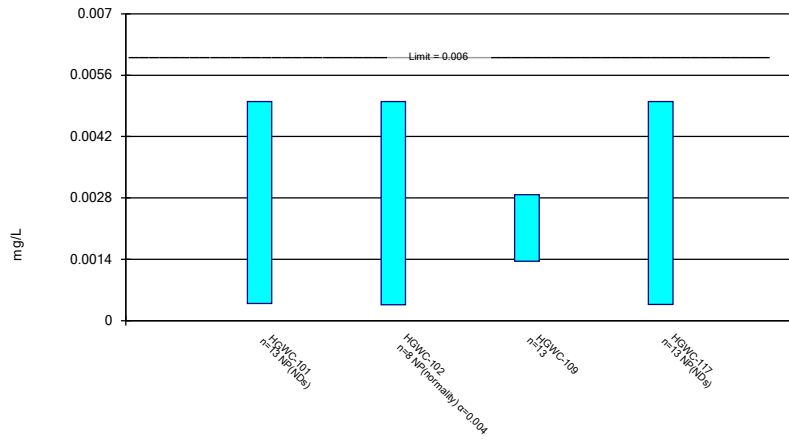
State Confidence Interval - All Results (No Significant)

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)

Parametric and Non-Parametric (NP) Confidence Interval

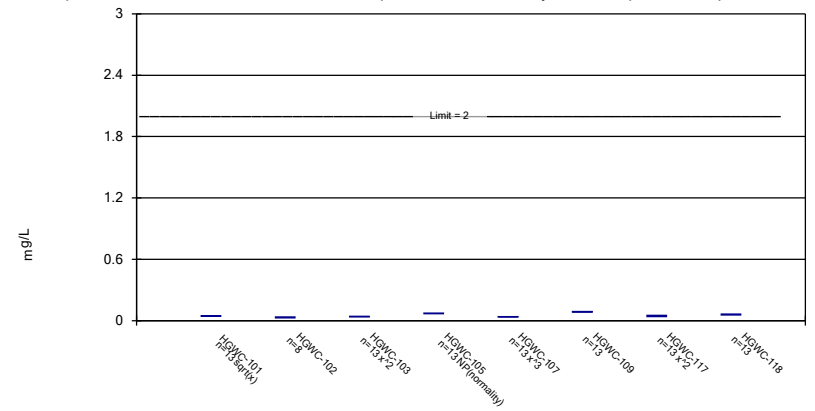
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

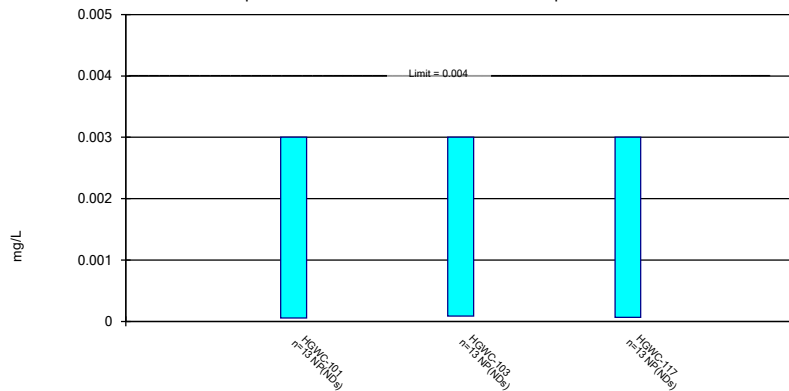
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

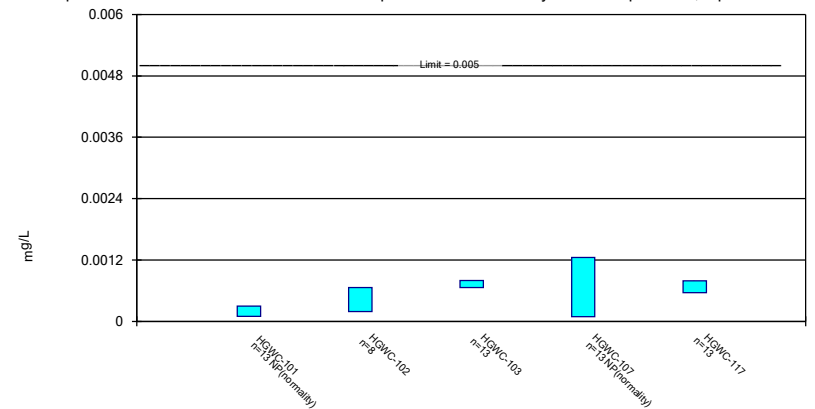
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

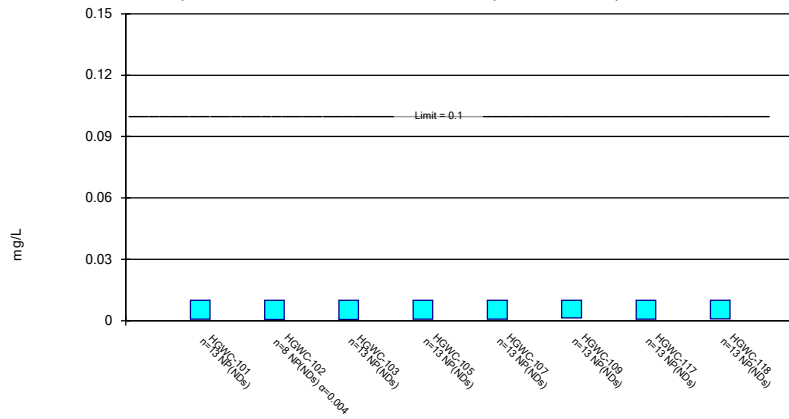
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

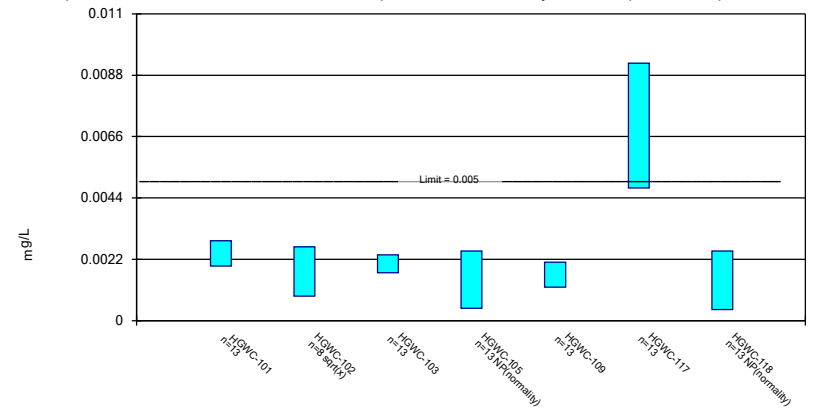
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Chromium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

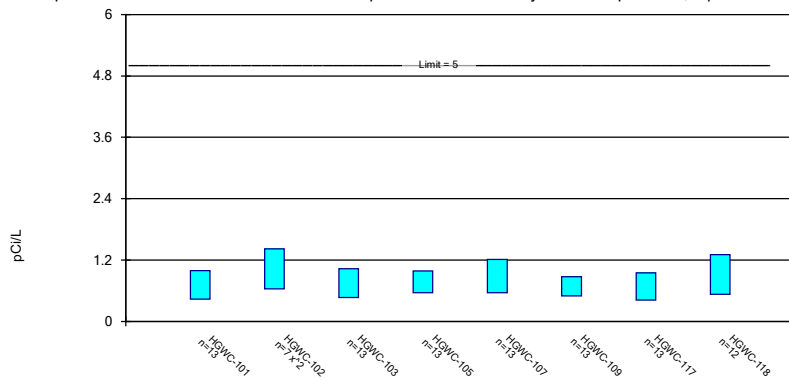
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric Confidence Interval

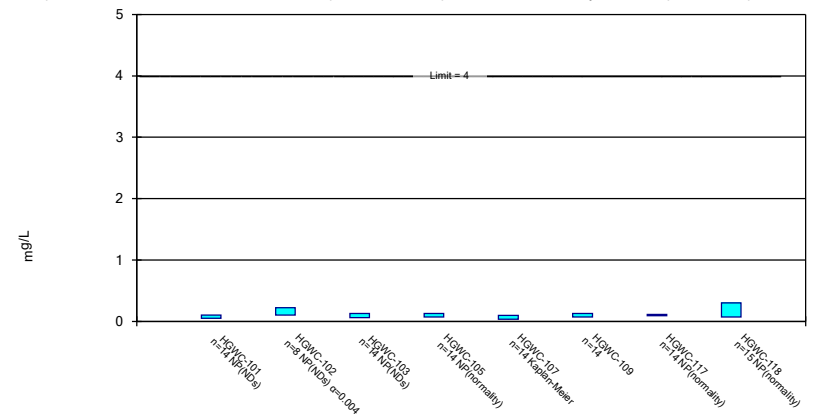
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



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

Parametric and Non-Parametric (NP) Confidence Interval

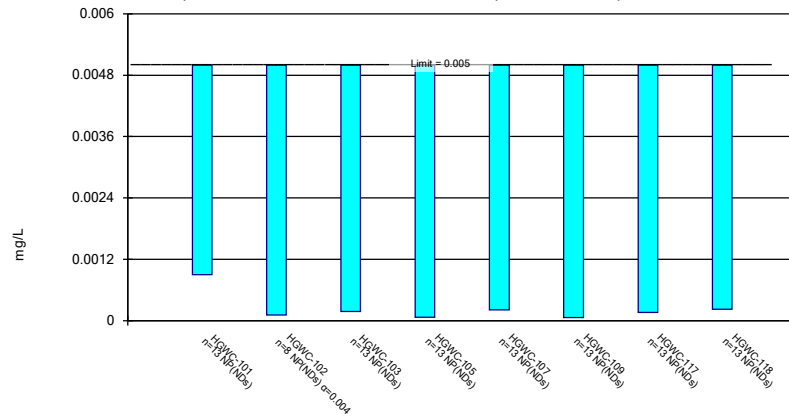
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



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

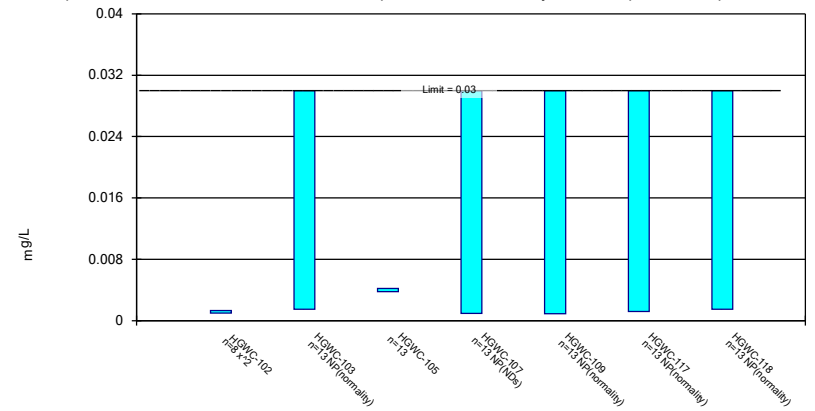
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Lead Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

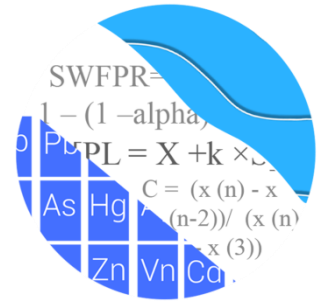
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 12/22/2020 6:00 AM View: Confidence Interval
 Plant Hammond Client: Southern Company Data: Hammond AP-4

March 2021

GROUNDWATER STATS CONSULTING



July 27, 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)
March 2021 Sample Event – Statistical Analysis

Dear Ms. Jurinko,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the March 2021 Semi-Annual Groundwater Detection and Assessment Monitoring Statistical summary of groundwater data 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 (EPD) Rules for Solid Waste Management Chapter 391-3-4-.10 and follows the United States Environmental Protection Agency (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 at least 8 samples. Upgradient wells HGWA-47 and HGWA-48D were first sampled in September 2020 and currently have a maximum of 5 samples.

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 Appendix IV downgradient and delineation well/constituent pairs with 100% non-detects 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 in subsequent sampling events. 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 non-detect 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 non-detects, 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% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

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 non-detects.

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 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 – March 2021

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 March 2021 (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 March 2021 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 and HGWCA-113 (upgradient)

Decreasing:

- Sulfate: HGWA-113 (upgradient)

Although not identified by the Sen's Slope/Mann-Kendall test due to stable data earlier in the period of record, it was noted that concentrations in well HGWC-117 for chloride have been steadily increasing since April 2019.

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 – March 2021

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% non-detects 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 March 2021 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% non-detects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The background limits were then used when determining the groundwater protection standard (GWPS) under Georgia EPD Rule 391-3-4-.10(6)(a). Georgia EPD has not incorporated the updated GWPS into the current

Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, for sites regulated under Georgia EPD Rules, the GWPS is:

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

Following the above Georgia EPD Rule requirements, GWPS were established for statistical comparison of Appendix IV constituents for the March 2021 sample event according to the state rules (Figure G). Note that a GWPS is established for antimony, mercury, molybdenum, selenium, and thallium. However, since these constituents were not sampled during the March 2021 sampling event, no statistical comparisons with confidence intervals were required.

To complete the statistical comparison to GWPS, confidence intervals were constructed for the Appendix IV constituents in each downgradient well (Figure H). The Sanitas software was used to calculate the tolerance limits and the confidence intervals. Those confidence intervals were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a). Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. 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. Note that reporting limits decreased for the following constituents during this analysis:

- Beryllium from <0.003 mg/L to <0.0005 mg/L
- Cadmium from <0.0025 mg/L to <0.0005 mg/L
- Chromium from <0.01 mg/L to <0.005 mg/L
- Lead from <0.005 mg/L to <0.001 mg/L

As a result, background limits were lower for these constituents. However, in all cases, except for lead which uses the background limit as the GWPS, the established MCL was higher than the background limits. Therefore, the GWPS were not affected. Additionally, some of the confidence intervals constructed on downgradient wells resulted in decreased upper and lower confidence limits since all historical non-detects within a given well are replaced with the most recent reporting limit.

A summary of the confidence intervals follows this letter. An exceedance was identified for the following well/constituent pair:

- Cobalt: HGWC-117

Note that the lower confidence limit of 0.0051 mg/L for cobalt at well HGWC-117 exceeded the GWPS of 0.005 mg/L.

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,



Tristan Clark
Groundwater Analyst



Andrew Collins
Project Manager

100% Non-Detects: Appendix IV Downgradient & Delineation

Analysis Run 4/21/2021 5:33 PM View: Appendix IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Antimony (mg/L)

HGWC-101, HGWC-105, HGWC-109, HGWC-117, HGWC-118

Arsenic (mg/L)

HGWC-103, HGWC-105, HGWC-107

Beryllium (mg/L)

HGWC-102, HGWC-105, HGWC-107, HGWC-109

Cadmium (mg/L)

HGWC-105, HGWC-109, HGWC-118

Cobalt (mg/L)

HGWC-107

Lithium (mg/L)

HGWC-101

Mercury (mg/L)

HGWC-102, HGWC-105, HGWC-107

Molybdenum (mg/L)

HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Selenium (mg/L)

HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Thallium (mg/L)

HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Appendix III Interwell Prediction Limit - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/15/2021, 4:46 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	3/17/2021	0.13	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-102	0.05	n/a	3/17/2021	2.7	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-103	0.05	n/a	3/18/2021	2.4	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-105	0.05	n/a	3/18/2021	1.5	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-107	0.05	n/a	3/18/2021	0.92	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-109	0.05	n/a	3/17/2021	0.26	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-117	0.05	n/a	3/19/2021	1.5	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-118	0.05	n/a	3/18/2021	0.81	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-102	73.3	n/a	3/17/2021	111	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-103	73.3	n/a	3/18/2021	83.7	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	73.3	n/a	3/18/2021	97.7	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-117	73.3	n/a	3/19/2021	87.3	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	73.3	n/a	3/18/2021	85.4	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-102	5.7	n/a	3/17/2021	6.9	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-103	5.7	n/a	3/18/2021	6.2	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-117	5.7	n/a	3/19/2021	24.9	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-101	7.54	5.47	3/17/2021	5.41	Yes	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	3/17/2021	107	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-102	14	n/a	3/17/2021	332	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	3/18/2021	286	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	3/18/2021	196	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-107	14	n/a	3/18/2021	128	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	3/17/2021	28.3	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-117	14	n/a	3/19/2021	162	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-118	14	n/a	3/18/2021	87.8	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-102	332.6	n/a	3/17/2021	626	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-103	332.6	n/a	3/18/2021	465	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	332.6	n/a	3/18/2021	410	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	332.6	n/a	3/19/2021	371	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2

Appendix III Interwell Prediction Limit - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/15/2021, 4:46 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	3/17/2021	0.13	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-102	0.05	n/a	3/17/2021	2.7	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-103	0.05	n/a	3/18/2021	2.4	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-105	0.05	n/a	3/18/2021	1.5	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-107	0.05	n/a	3/18/2021	0.92	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-109	0.05	n/a	3/17/2021	0.26	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-117	0.05	n/a	3/19/2021	1.5	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-118	0.05	n/a	3/18/2021	0.81	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-101	73.3	n/a	3/17/2021	21.8	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-102	73.3	n/a	3/17/2021	111	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-103	73.3	n/a	3/18/2021	83.7	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	73.3	n/a	3/18/2021	97.7	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-107	73.3	n/a	3/18/2021	56	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-109	73.3	n/a	3/17/2021	37.3	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-117	73.3	n/a	3/19/2021	87.3	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	73.3	n/a	3/18/2021	85.4	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-101	5.7	n/a	3/17/2021	5.5	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-102	5.7	n/a	3/17/2021	6.9	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-103	5.7	n/a	3/18/2021	6.2	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-105	5.7	n/a	3/18/2021	4.3	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-107	5.7	n/a	3/18/2021	3.2	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-109	5.7	n/a	3/17/2021	4.7	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-117	5.7	n/a	3/19/2021	24.9	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-118	5.7	n/a	3/18/2021	4.3	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-101	0.1716	n/a	3/17/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-102	0.1716	n/a	3/17/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-103	0.1716	n/a	3/18/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-105	0.1716	n/a	3/18/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-107	0.1716	n/a	3/18/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-109	0.1716	n/a	3/17/2021	0.089J	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-117	0.1716	n/a	3/19/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-118	0.1716	n/a	3/18/2021	0.079J	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
pH (s.u.)	HGWC-101	7.54	5.47	3/17/2021	5.41	Yes	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-102	7.54	5.47	3/17/2021	5.78	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-103	7.54	5.47	3/18/2021	5.51	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-105	7.54	5.47	3/18/2021	6.57	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-107	7.54	5.47	3/18/2021	6.2	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-109	7.54	5.47	3/17/2021	6.55	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-117	7.54	5.47	3/19/2021	6.14	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-118	7.54	5.47	3/18/2021	7.11	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	3/17/2021	107	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-102	14	n/a	3/17/2021	332	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	3/18/2021	286	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	3/18/2021	196	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-107	14	n/a	3/18/2021	128	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	3/17/2021	28.3	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-117	14	n/a	3/19/2021	162	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-118	14	n/a	3/18/2021	87.8	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-101	332.6	n/a	3/17/2021	213	No	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-102	332.6	n/a	3/17/2021	626	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-103	332.6	n/a	3/18/2021	465	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	332.6	n/a	3/18/2021	410	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-107	332.6	n/a	3/18/2021	255	No	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-109	332.6	n/a	3/17/2021	171	No	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	332.6	n/a	3/19/2021	371	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-118	332.6	n/a	3/18/2021	328	No	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2

Appendix III Trend Test - Prediction Limit Exceedances - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/19/2021, 1:22 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-107	0.04373	64	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-113 (bg)	0.3842	45	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-105	5.165	61	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-113 (bg)	-1.781	-58	-43	Yes	13	0	n/a	n/a	0.01	NP

Appendix III Trend Test - Prediction Limit Exceedances - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/19/2021, 1:22 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-111 (bg)	-0.001004	-12	-43	No	13	15.38	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-112 (bg)	-0.00203	-27	-43	No	13	23.08	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-113 (bg)	-0.0003883	-7	-43	No	13	7.692	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-101	0.006042	23	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-102	-0.4388	-14	-25	No	9	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-103	0.02192	13	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-105	0.03697	21	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-107	0.04373	64	48	Yes	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-109	-0.02609	-45	-48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-117	0.09547	42	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-118	-0.005229	-3	-43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-111 (bg)	2.851	14	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-112 (bg)	0.05064	12	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-113 (bg)	0.3842	45	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-102	-17.65	-11	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-103	3.572	33	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-105	5.165	61	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-117	2.328	32	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-118	1.559	31	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-111 (bg)	-0.0137	-1	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-112 (bg)	0.03351	16	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-113 (bg)	-0.08208	-34	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-102	-0.04157	-3	-25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-103	0.1966	29	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-117	2.698	43	43	No	13	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWA-111 (bg)	0.06841	12	53	No	15	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWA-112 (bg)	-0.02033	-23	-53	No	15	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWA-113 (bg)	0.02744	30	53	No	15	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWC-101	0.01391	28	58	No	16	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-111 (bg)	0	-10	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-112 (bg)	-0.02244	-29	-43	No	13	15.38	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-113 (bg)	-1.781	-58	-43	Yes	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-101	-2.874	-25	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-102	12.25	2	25	No	9	11.11	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-103	0	1	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-105	-5.151	-34	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-107	-0.4844	-22	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-109	-2.891	-37	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-117	0	-1	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-118	-0.2732	-7	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-111 (bg)	6.82	13	43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-112 (bg)	-1.162	-8	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-113 (bg)	-0.8749	-1	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-102	-70.01	-12	-25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-103	-3.687	-15	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-105	12.57	21	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-117	-1.931	-1	-48	No	14	0	n/a	n/a	0.01	NP

Upper Tolerance Limit

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/21/2021, 3:51 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	38	n/a	n/a	92.11	n/a	n/a	0.1424	NP Inter(NDs)
Arsenic (mg/L)	0.005	n/a	n/a	52	n/a	n/a	92.31	n/a	n/a	0.06944	NP Inter(NDs)
Barium (mg/L)	0.1	n/a	n/a	52	n/a	n/a	0	n/a	n/a	0.06944	NP Inter(normality)
Beryllium (mg/L)	0.0019	n/a	n/a	52	n/a	n/a	86.54	n/a	n/a	0.06944	NP Inter(NDs)
Cadmium (mg/L)	0.0005	n/a	n/a	52	n/a	n/a	100	n/a	n/a	0.06944	NP Inter(NDs)
Chromium (mg/L)	0.0061	n/a	n/a	52	n/a	n/a	26.92	n/a	n/a	0.06944	NP Inter(normality)
Cobalt (mg/L)	0.005	n/a	n/a	52	n/a	n/a	84.62	n/a	n/a	0.06944	NP Inter(NDs)
Combined Radium 226 & 228 (pCi/L)	1.406	n/a	n/a	52	0.6644	0.3612	0	None	No	0.05	Inter
Fluoride (mg/L)	0.1747	n/a	n/a	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.05	Inter
Lead (mg/L)	0.0016	n/a	n/a	52	n/a	n/a	59.62	n/a	n/a	0.06944	NP Inter(NDs)
Lithium (mg/L)	0.03	n/a	n/a	52	n/a	n/a	44.23	n/a	n/a	0.06944	NP Inter(normality)
Mercury (mg/L)	0.0005	n/a	n/a	38	n/a	n/a	76.32	n/a	n/a	0.1424	NP Inter(NDs)
Molybdenum (mg/L)	0.01	n/a	n/a	38	n/a	n/a	86.84	n/a	n/a	0.1424	NP Inter(NDs)
Selenium (mg/L)	0.01	n/a	n/a	38	n/a	n/a	78.95	n/a	n/a	0.1424	NP Inter(NDs)
Thallium (mg/L)	0.001	n/a	n/a	38	n/a	n/a	100	n/a	n/a	0.1424	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	0.1	2
Beryllium, Total (mg/L)	0.004	0.0019	0.004
Cadmium, Total (mg/L)	0.005	0.005	0.005
Chromium, Total (mg/L)	0.1	0.0061	0.1
Cobalt, Total (mg/L)		0.005	0.005
Combined Radium, Total (pCi/L)	5	1.41	5
Fluoride, Total (mg/L)	4	0.18	4
Lead, Total (mg/L)		0.0016	0.0016
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*

Confidence Intervals - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/27/2021, 10:27 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Cobalt (mg/L)	HGWC-117	0.009463	0.005094	0.005	Yes	14	0	No	0.01	Param.

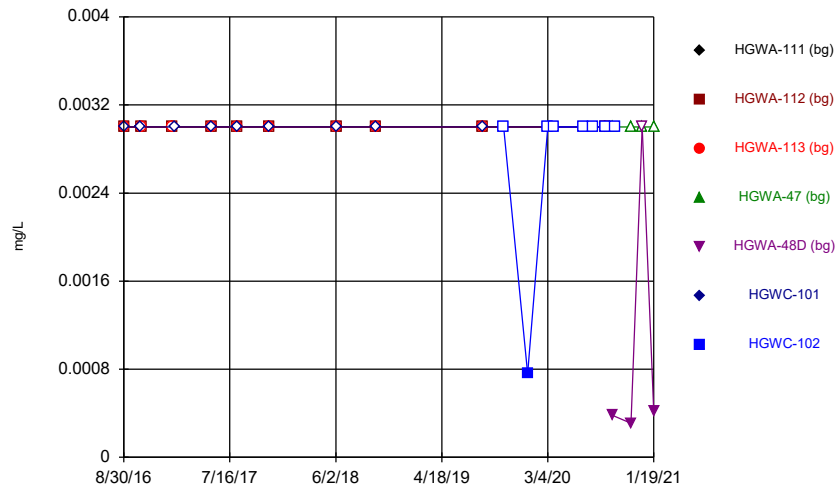
Confidence Intervals - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/27/2021, 10:27 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-101	0.005	0.00039	0.01	No	14	92.86	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-102	0.005	0.00036	0.01	No	9	55.56	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-109	0.002693	0.001421	0.01	No	14	0	sqrt(x)	0.01	Param.
Arsenic (mg/L)	HGWC-117	0.005	0.00037	0.01	No	14	92.86	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-118	0.005	0.001	0.01	No	14	92.86	No	0.01	NP (NDs)
Barium (mg/L)	HGWC-101	0.04678	0.04071	2	No	14	0	x^(1/3)	0.01	Param.
Barium (mg/L)	HGWC-102	0.03457	0.02654	2	No	9	0	No	0.01	Param.
Barium (mg/L)	HGWC-103	0.04124	0.03526	2	No	14	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-105	0.0745	0.066	2	No	14	0	No	0.01	NP (normality)
Barium (mg/L)	HGWC-107	0.03966	0.0373	2	No	14	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-109	0.08872	0.08207	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-117	0.05161	0.04101	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-118	0.06381	0.05441	2	No	14	0	No	0.01	Param.
Beryllium (mg/L)	HGWC-101	0.003	0.00057	0.004	No	14	50	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-103	0.003	0.00088	0.004	No	14	78.57	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-117	0.003	0.00068	0.004	No	14	64.29	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-118	0.003	0.00093	0.004	No	14	92.86	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-101	0.0002259	0.0001434	0.005	No	14	14.29	No	0.01	Param.
Cadmium (mg/L)	HGWC-102	0.0007433	0.0002211	0.005	No	9	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-103	0.0007911	0.0006603	0.005	No	14	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-107	0.00025	0.00009	0.005	No	14	50	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-117	0.0008213	0.0005758	0.005	No	14	0	No	0.01	Param.
Chromium (mg/L)	HGWC-101	0.005	0.00075	0.1	No	14	71.43	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-102	0.005	0.00051	0.1	No	9	77.78	No	0.002	NP (NDs)
Chromium (mg/L)	HGWC-103	0.005	0.00069	0.1	No	14	57.14	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-105	0.005	0.00064	0.1	No	14	71.43	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-107	0.005	0.00074	0.1	No	14	92.86	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-109	0.005	0.0014	0.1	No	14	85.71	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-117	0.005	0.001	0.1	No	14	71.43	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-118	0.005	0.00098	0.1	No	14	64.29	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-101	0.002817	0.001983	0.005	No	14	7.143	No	0.01	Param.
Cobalt (mg/L)	HGWC-102	0.002337	0.0009837	0.005	No	9	0	ln(x)	0.01	Param.
Cobalt (mg/L)	HGWC-103	0.002335	0.001751	0.005	No	14	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-105	0.0025	0.00045	0.005	No	14	21.43	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-109	0.00223	0.001266	0.005	No	14	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-117	0.009463	0.005094	0.005	Yes	14	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-118	0.0025	0.0004	0.005	No	14	42.86	No	0.01	NP (normality)
Combined Radium 226 & 228 (pCi/L)	HGWC-101	0.9491	0.4125	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-102	1.438	0.4452	5	No	8	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-103	0.9845	0.4412	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-105	0.9531	0.5201	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-107	1.163	0.5015	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-109	0.8475	0.5012	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-117	0.9068	0.4041	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-118	1.243	0.5013	5	No	13	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-101	0.1	0.05	4	No	15	86.67	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-102	0.22	0.1	4	No	9	88.89	No	0.002	NP (NDs)
Fluoride (mg/L)	HGWC-103	0.13	0.06	4	No	15	73.33	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-105	0.13	0.07	4	No	15	53.33	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-107	0.16	0.057	4	No	15	53.33	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-109	0.1233	0.07299	4	No	15	13.33	No	0.01	Param.
Fluoride (mg/L)	HGWC-117	0.11	0.09	4	No	15	53.33	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-118	0.3	0.072	4	No	16	0	No	0.01	NP (normality)
Lead (mg/L)	HGWC-101	0.001	0.0009	0.0016	No	14	92.86	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-102	0.001	0.00011	0.0016	No	9	88.89	No	0.002	NP (NDs)
Lead (mg/L)	HGWC-103	0.001	0.00024	0.0016	No	14	64.29	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-105	0.001	0.000068	0.0016	No	14	71.43	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-107	0.001	0.00021	0.0016	No	14	71.43	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-109	0.001	0.000058	0.0016	No	14	85.71	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-117	0.001	0.00019	0.0016	No	14	64.29	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-118	0.001	0.00025	0.0016	No	14	64.29	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-102	0.001295	0.001026	0.03	No	9	0	x^2	0.01	Param.
Lithium (mg/L)	HGWC-103	0.03	0.0015	0.03	No	14	21.43	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-105	0.00419	0.003824	0.03	No	14	0	No	0.01	Param.
Lithium (mg/L)	HGWC-107	0.03	0.00094	0.03	No	14	57.14	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-109	0.03	0.001	0.03	No	14	50	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-117	0.03	0.0012	0.03	No	14	21.43	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-118	0.03	0.0017	0.03	No	14	42.86	No	0.01	NP (normality)

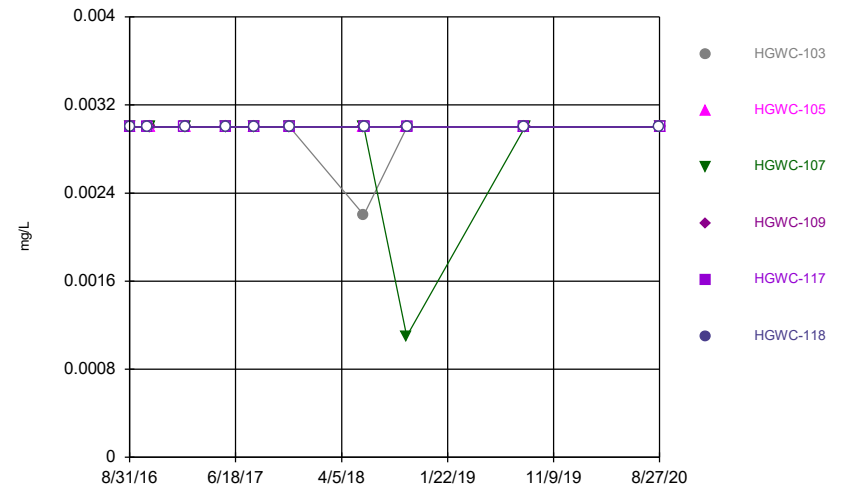
FIGURE A.

Time Series



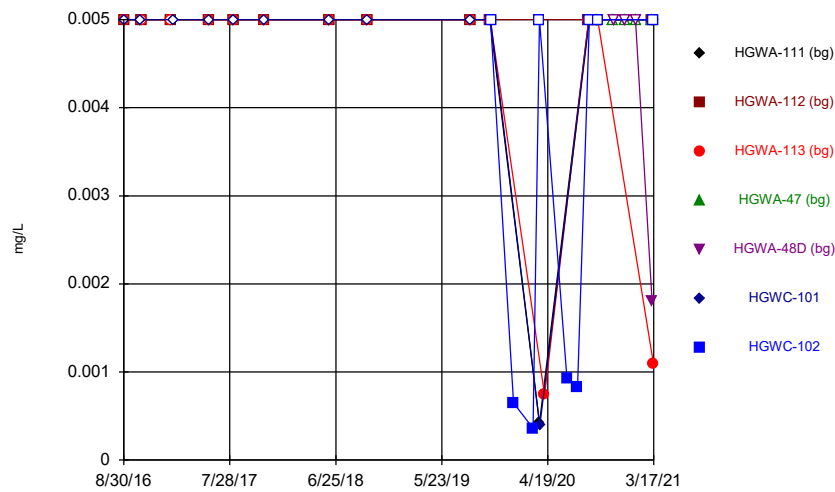
Constituent: Antimony Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



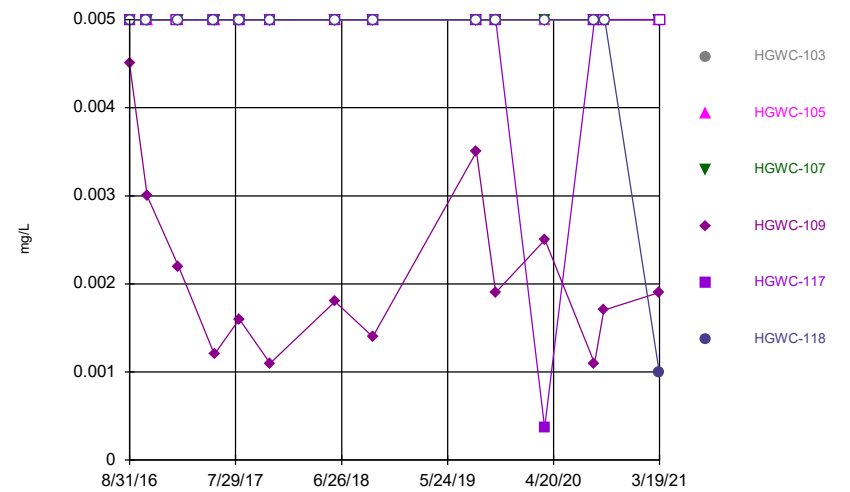
Constituent: Antimony Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



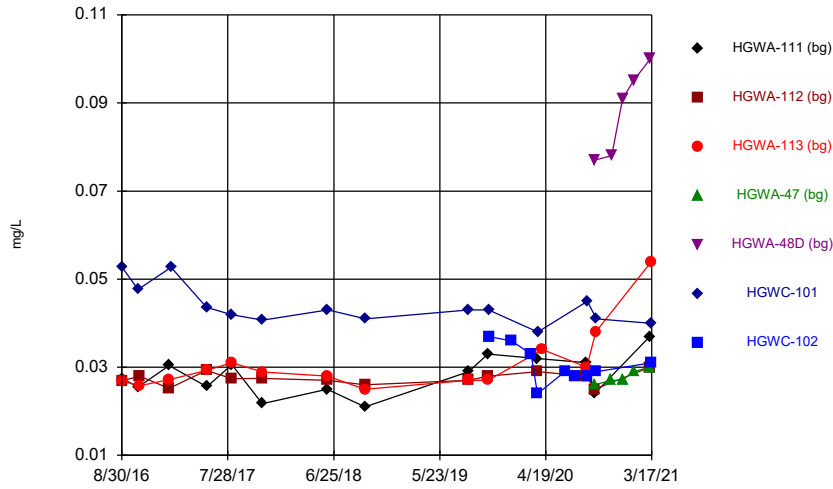
Constituent: Arsenic Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



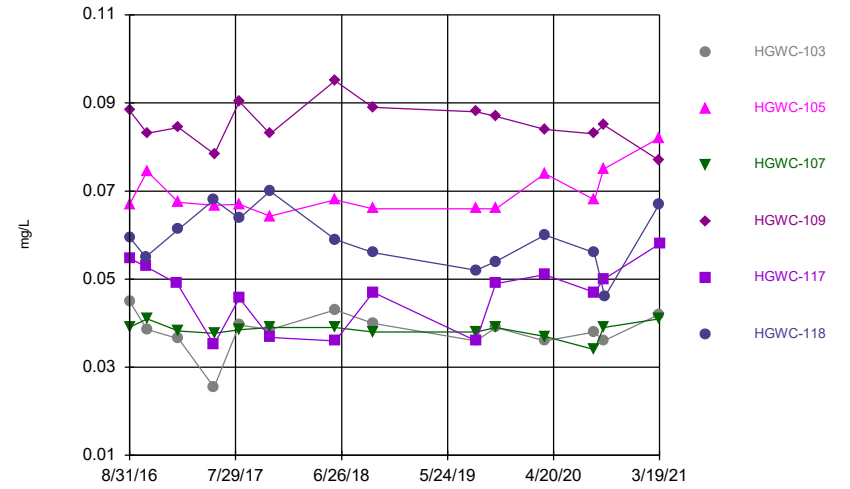
Constituent: Arsenic Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



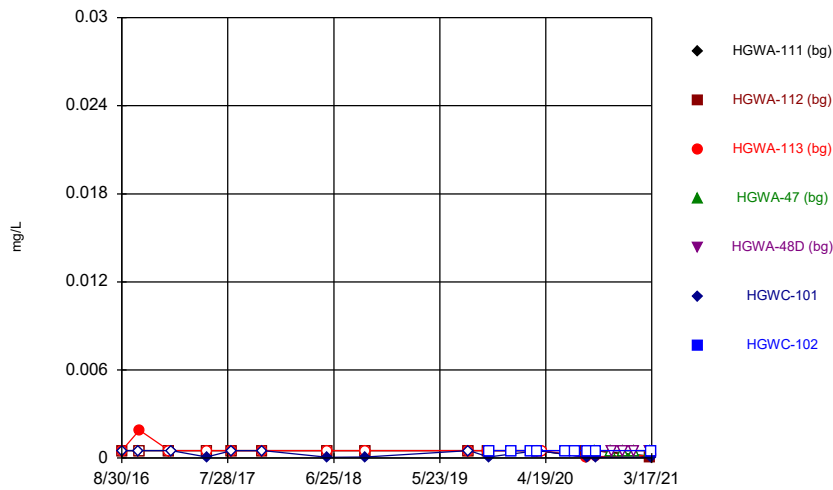
Constituent: Barium Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



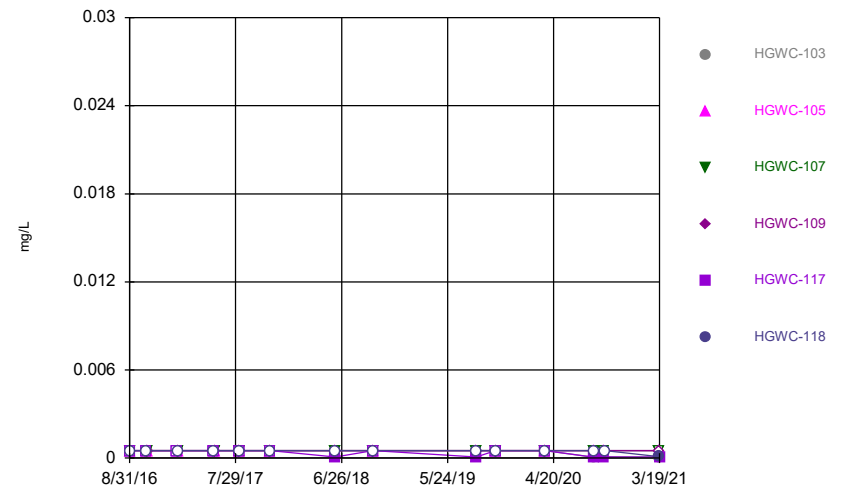
Constituent: Barium Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



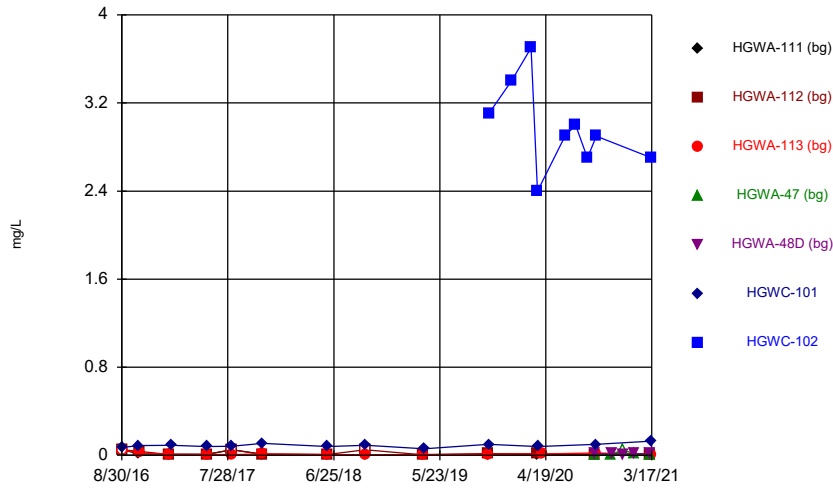
Constituent: Beryllium Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



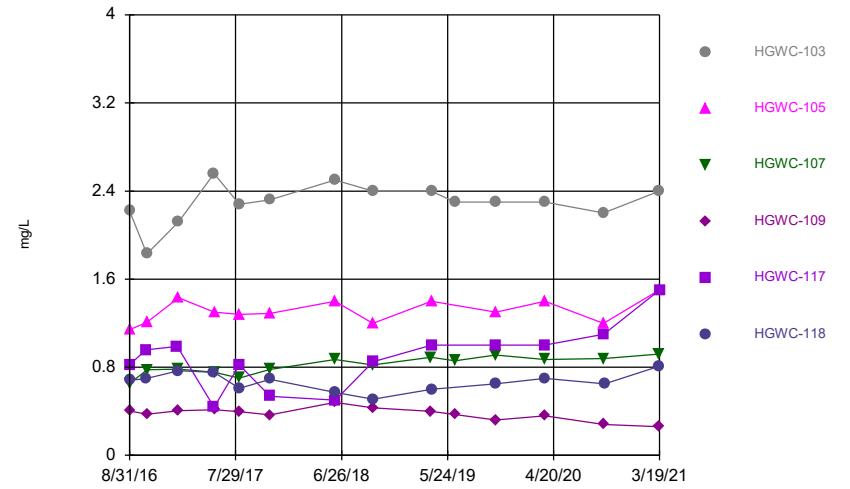
Constituent: Beryllium Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



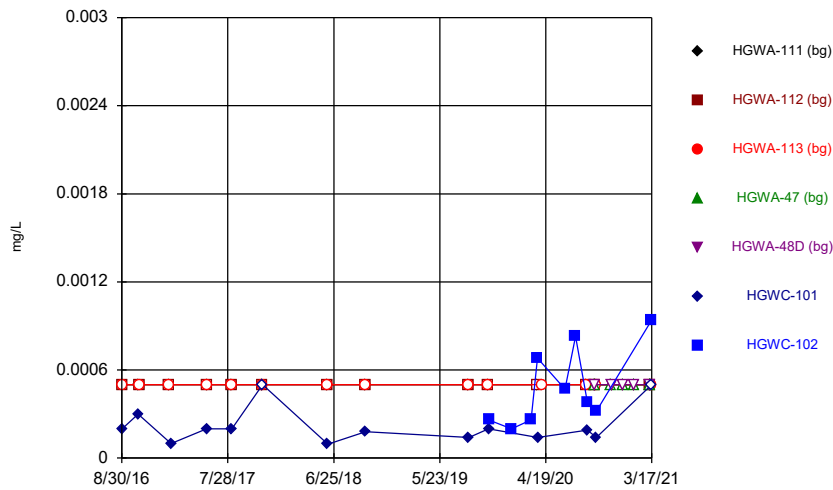
Constituent: Boron Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



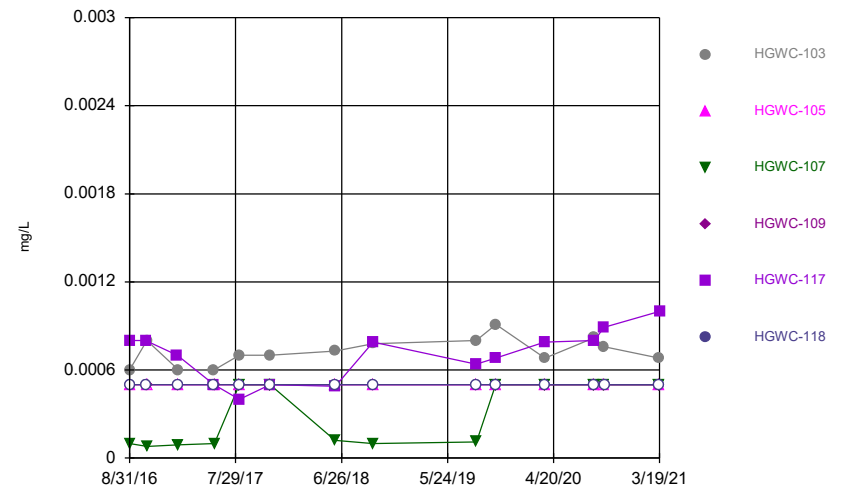
Constituent: Boron Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



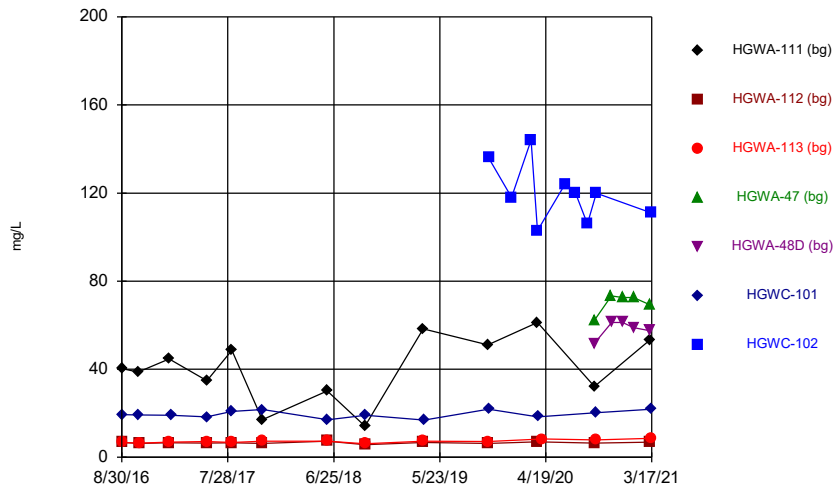
Constituent: Cadmium Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



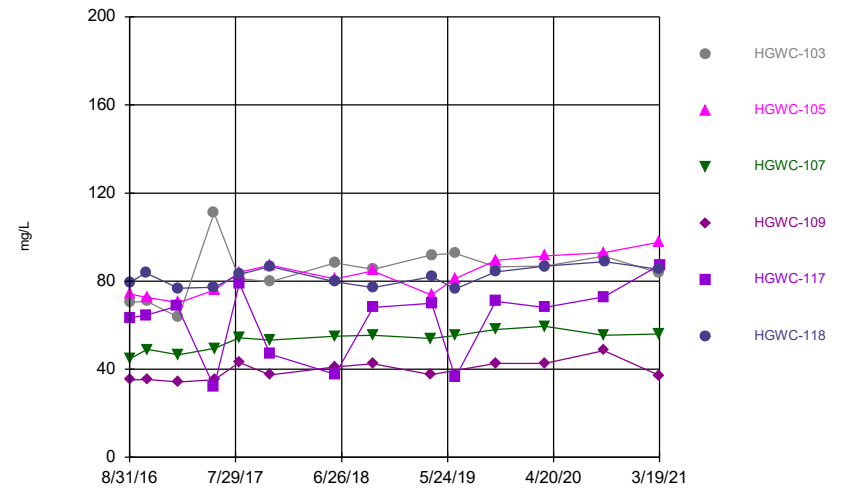
Constituent: Cadmium Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



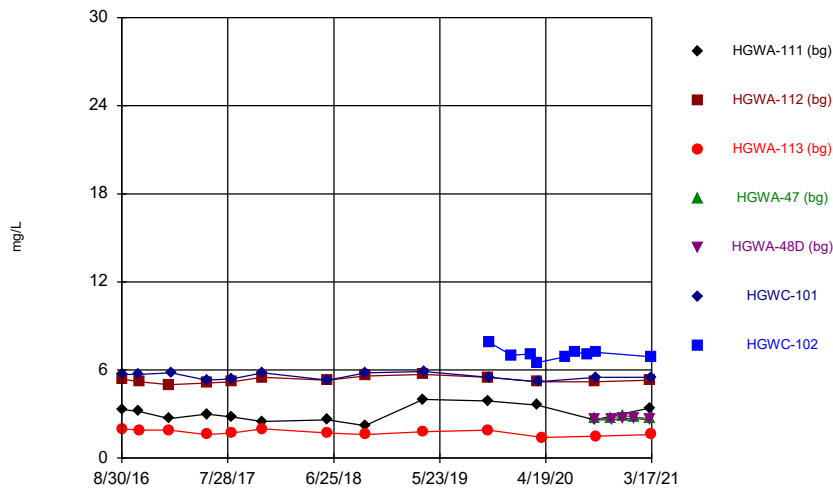
Constituent: Calcium Analysis Run 4/26/2021 5:20 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



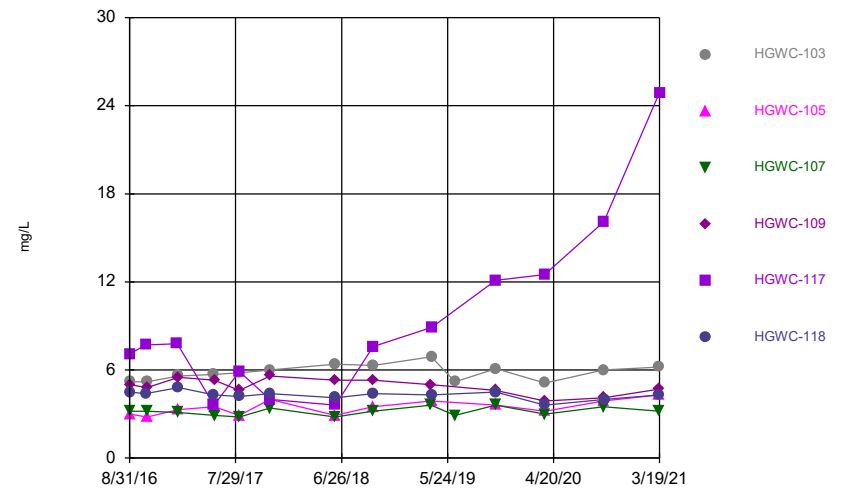
Constituent: Calcium Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



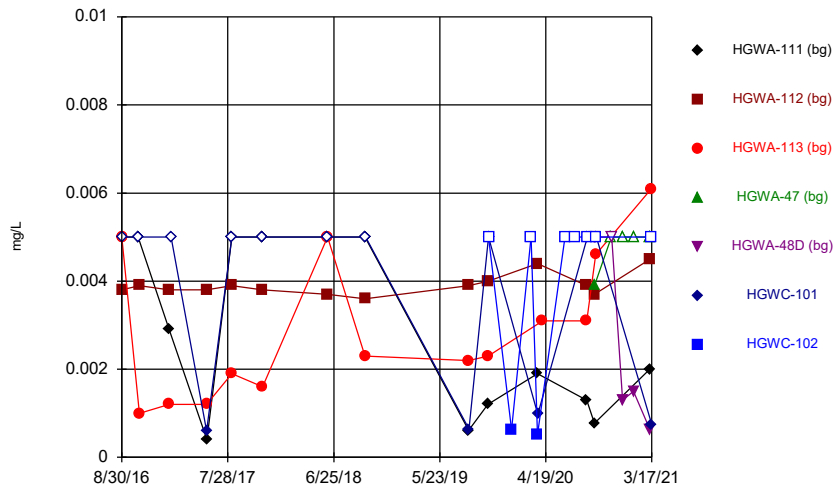
Constituent: Chloride Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



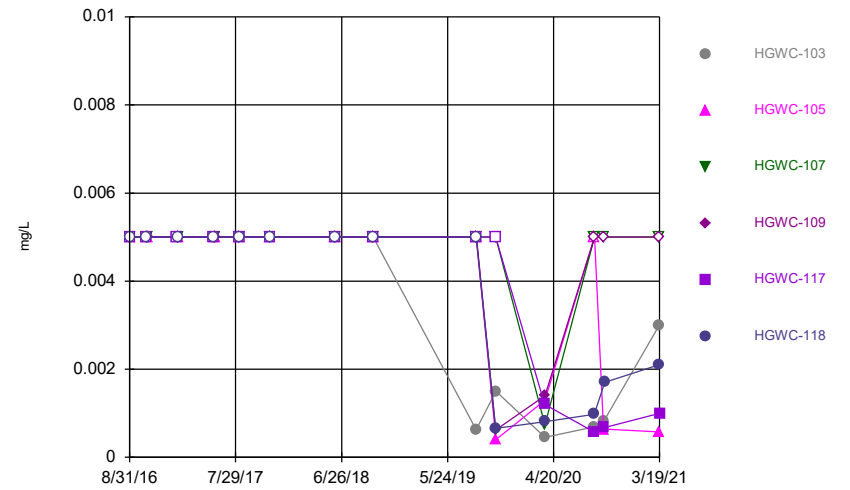
Constituent: Chloride Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



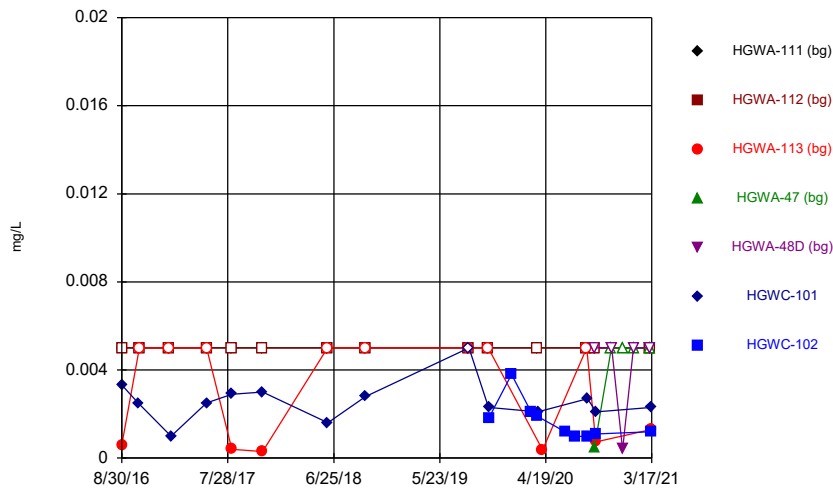
Constituent: Chromium Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



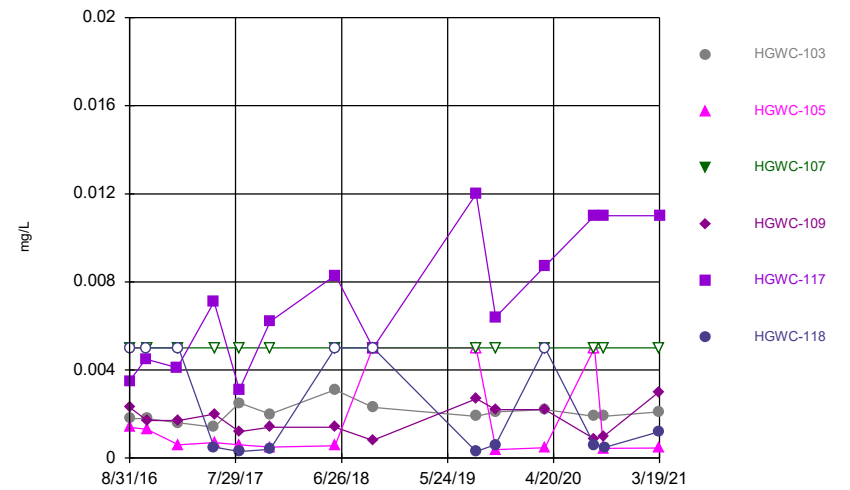
Constituent: Chromium Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



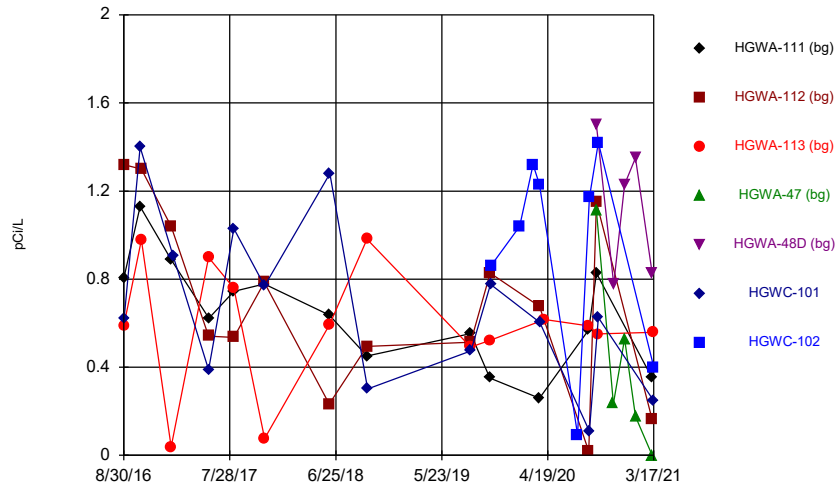
Constituent: Cobalt Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



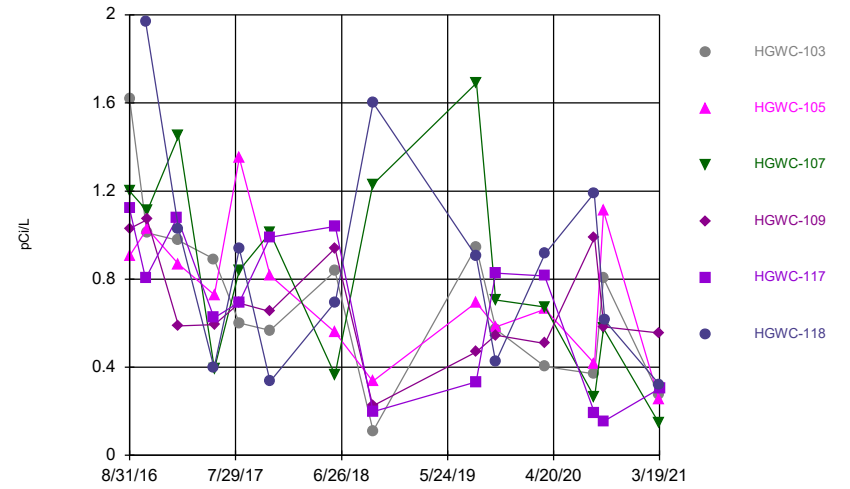
Constituent: Cobalt Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



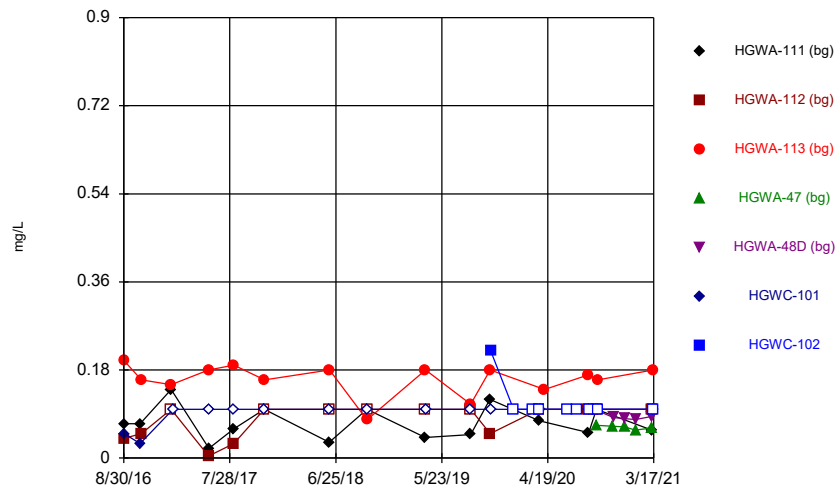
Constituent: Combined Radium 226 & 228 Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



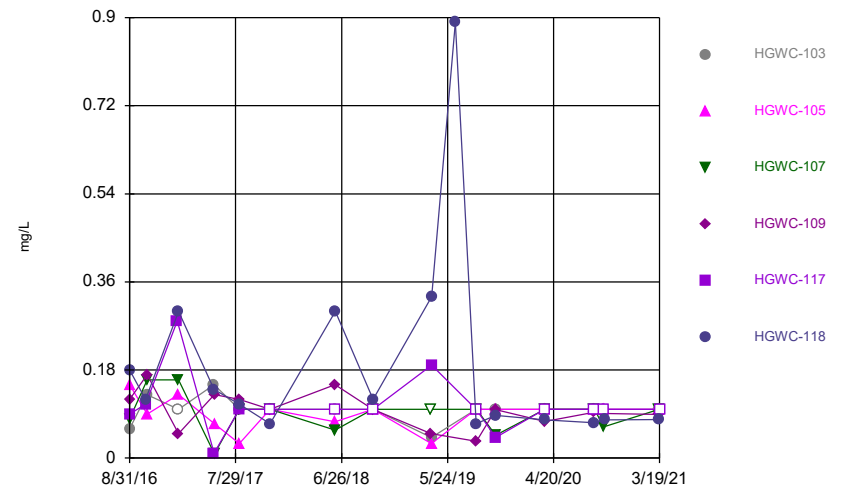
Constituent: Combined Radium 226 & 228 Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



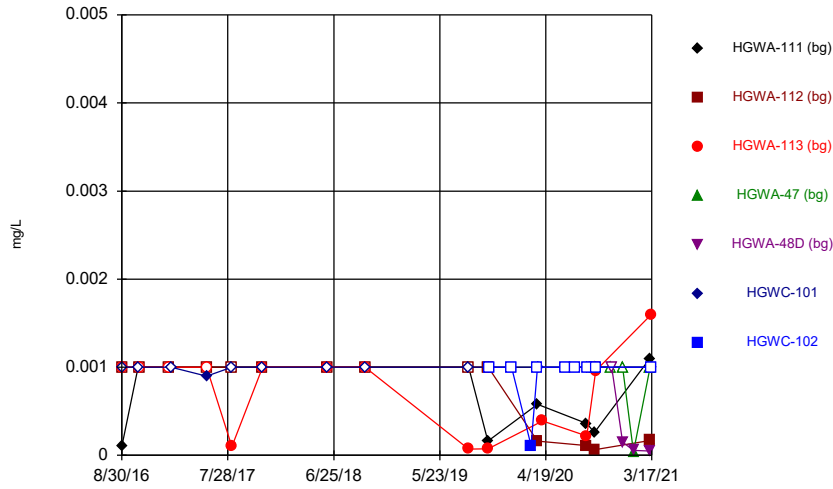
Constituent: Fluoride Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



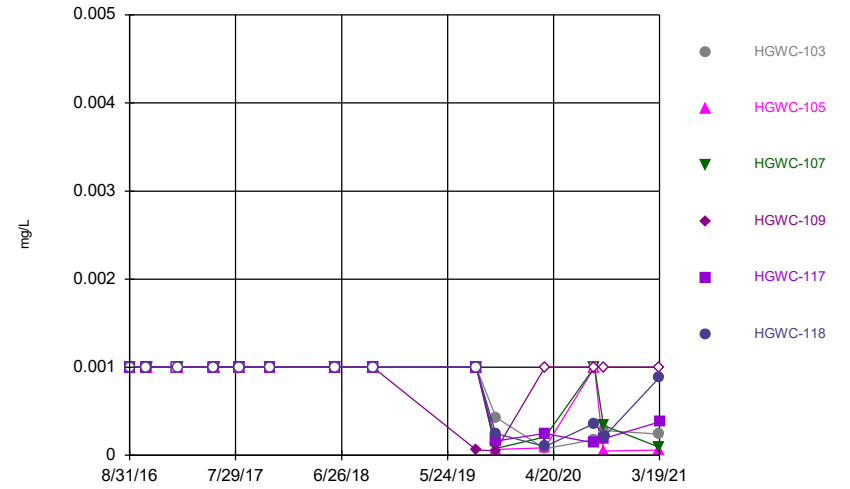
Constituent: Fluoride Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



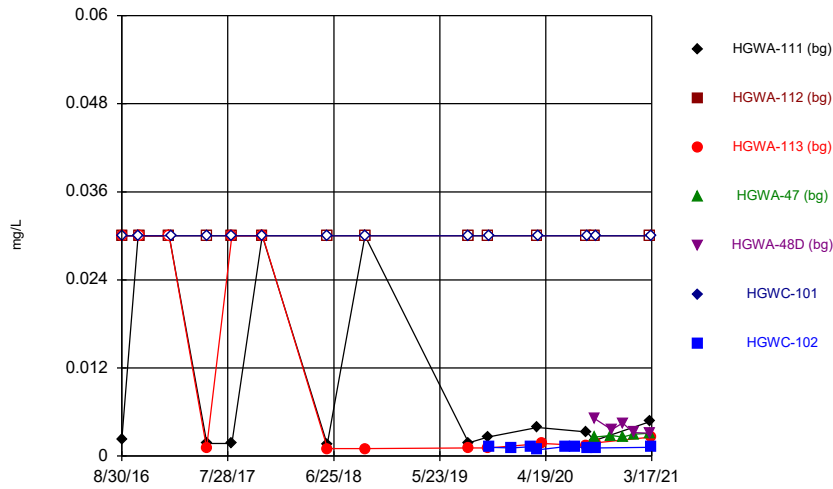
Constituent: Lead Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



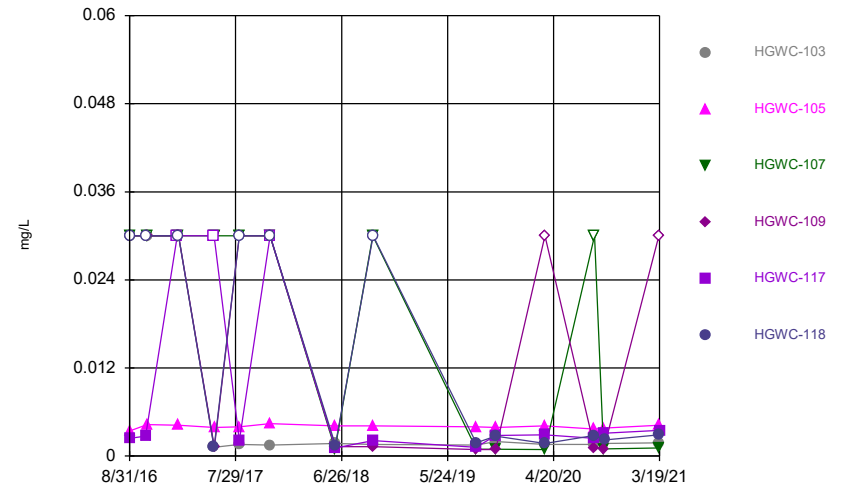
Constituent: Lead Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



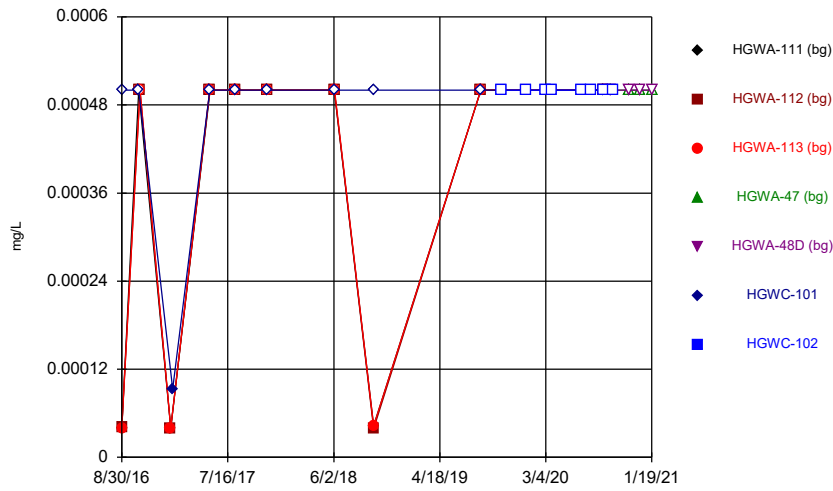
Constituent: Lithium Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



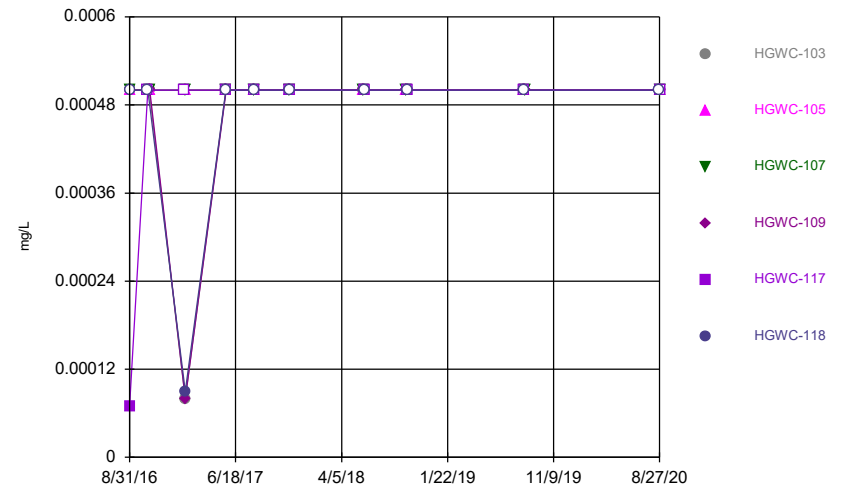
Constituent: Lithium Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



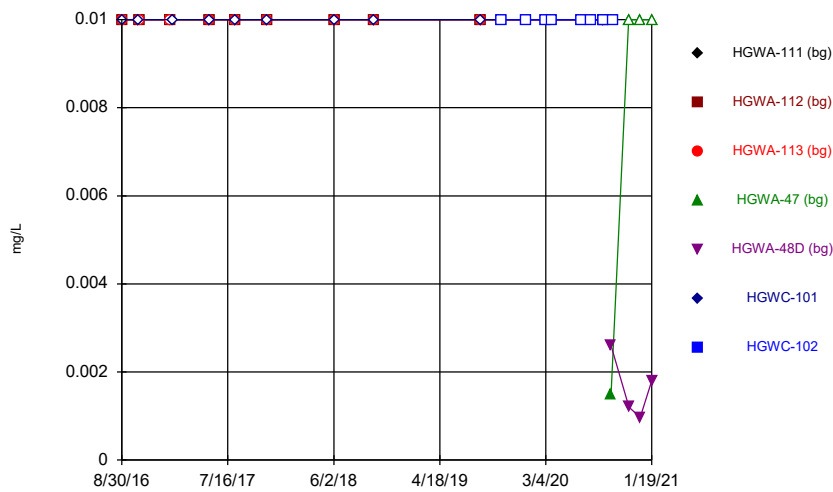
Constituent: Mercury Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



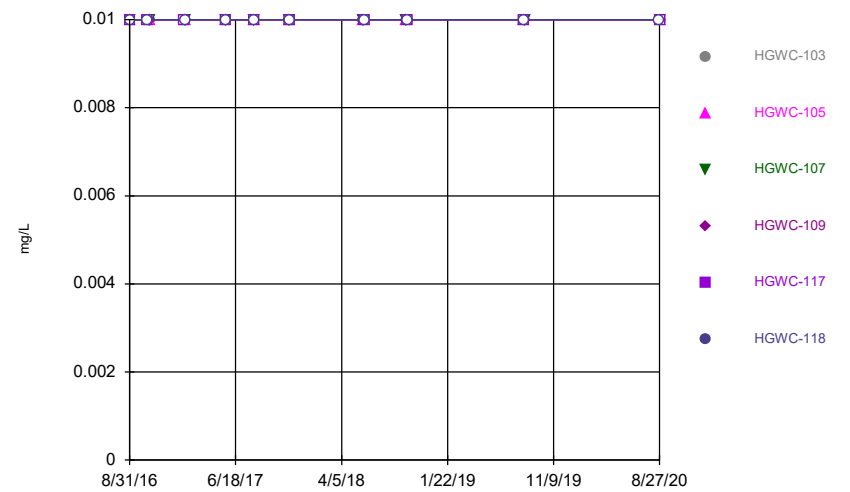
Constituent: Mercury Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



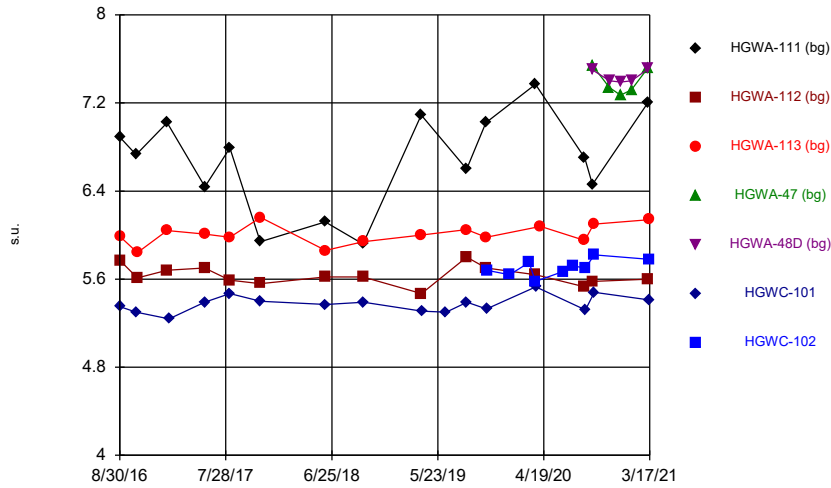
Constituent: Molybdenum Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



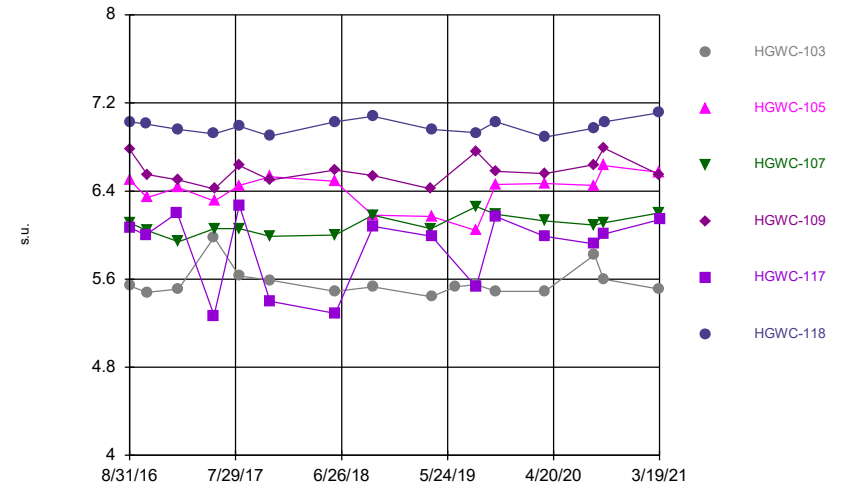
Constituent: Molybdenum Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



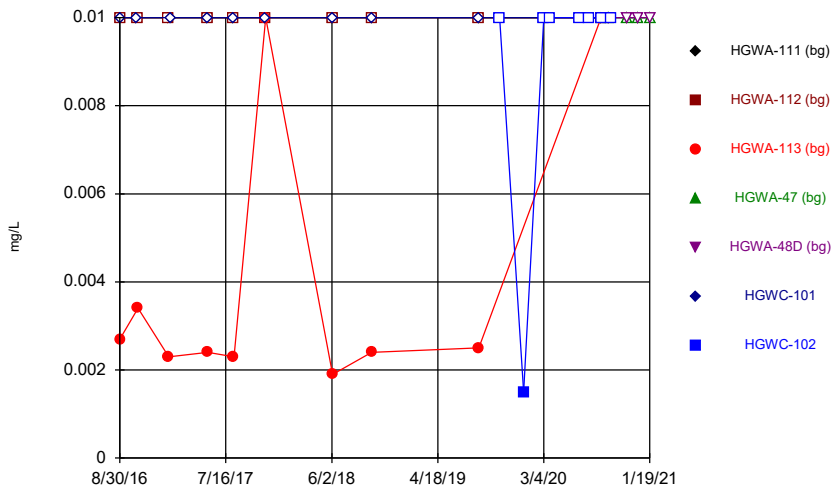
Constituent: pH Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



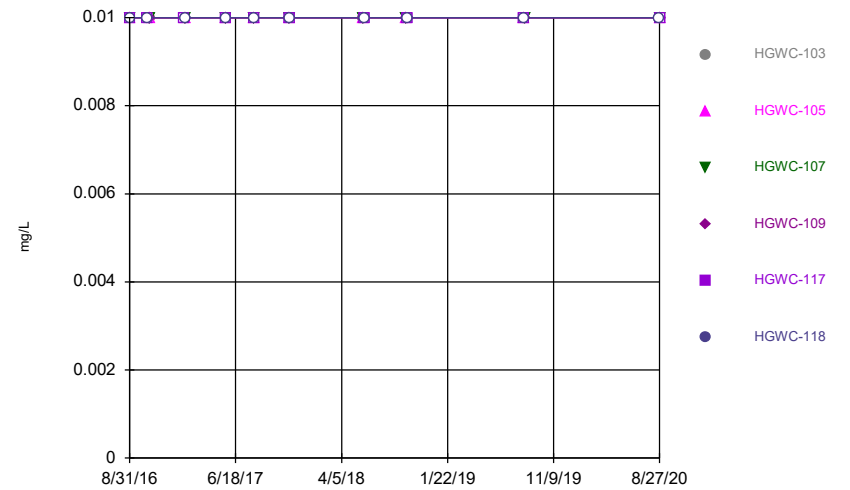
Constituent: pH Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



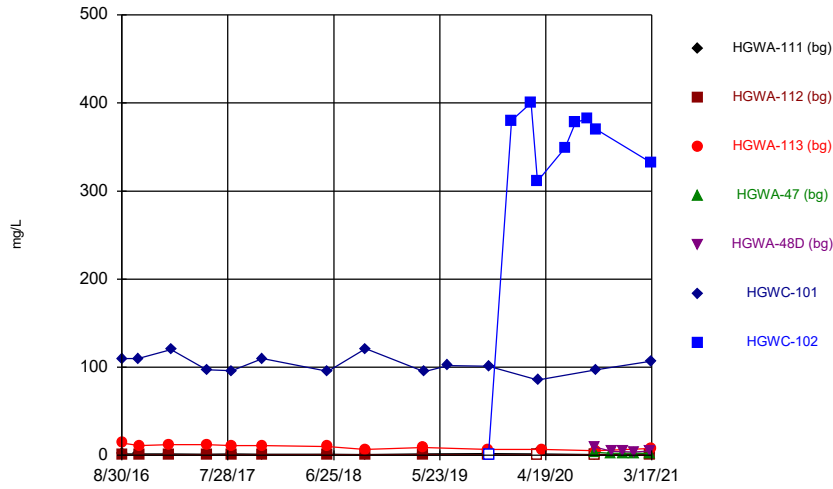
Constituent: Selenium Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



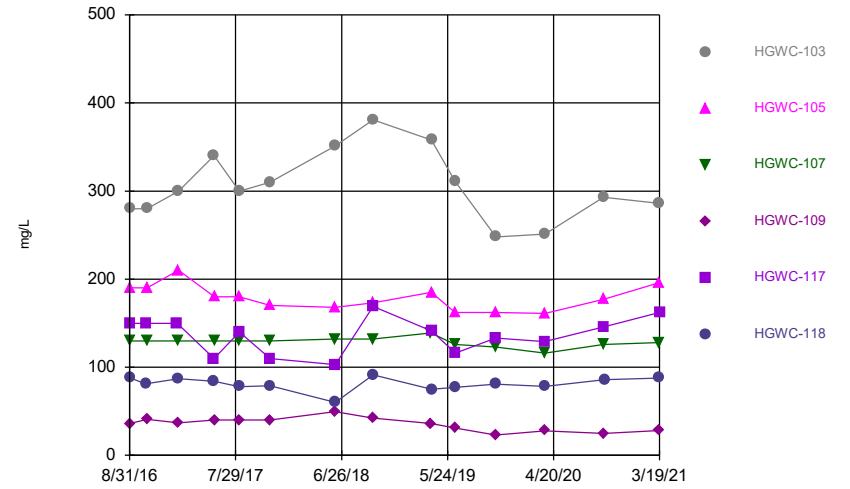
Constituent: Selenium Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



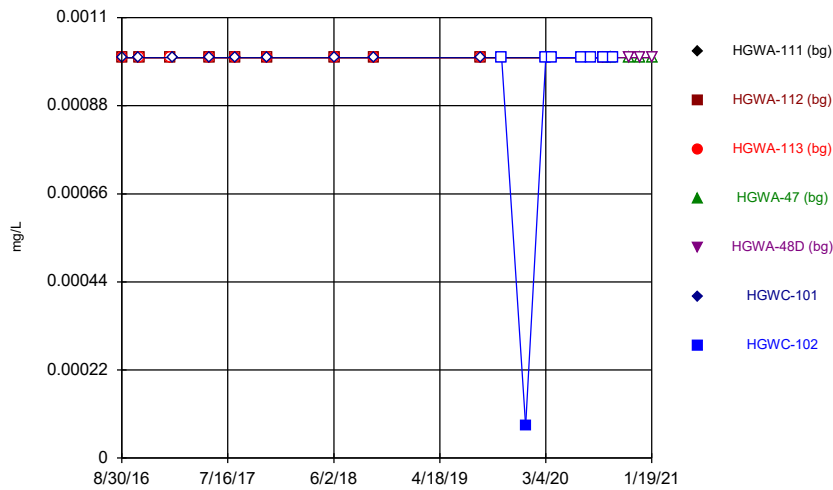
Constituent: Sulfate Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



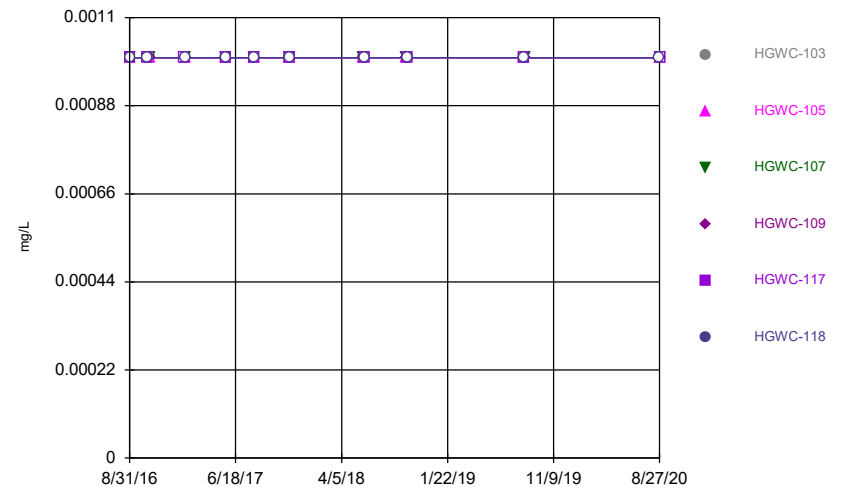
Constituent: Sulfate Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



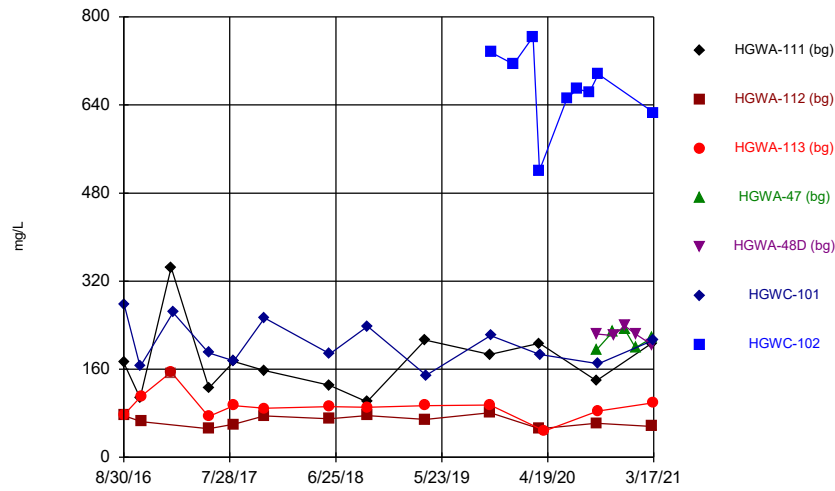
Constituent: Thallium Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



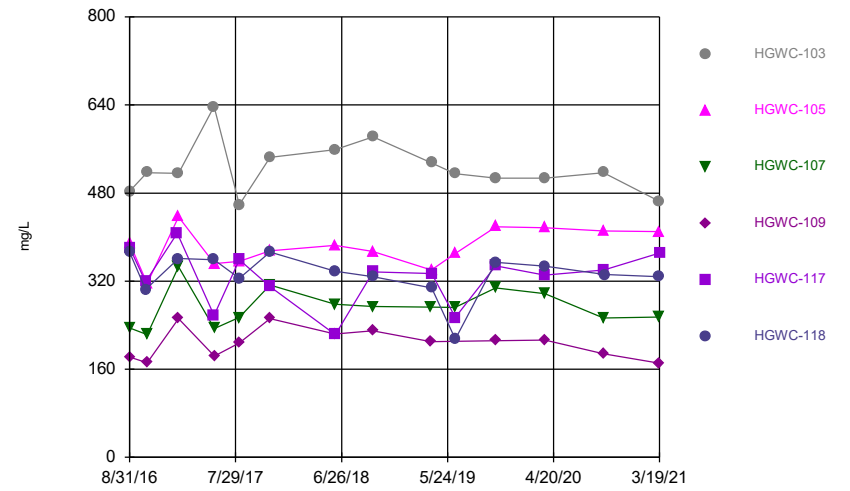
Constituent: Thallium Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



Constituent: Total Dissolved Solids Analysis Run 4/26/2021 5:21 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series



Constituent: Total Dissolved Solids Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Time Series

Constituent: Antimony (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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		
1/19/2021				<0.003	0.00042 (J)		

Time Series

Constituent: Antimony (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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 4/26/2021 5:22 PM View: Appendix III & IV
 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		
1/19/2021				<0.005	<0.005		
3/11/2021	<0.005						
3/12/2021		<0.005		<0.005	0.0018 (J)		
3/16/2021			0.0011 (J)				
3/17/2021						<0.005	<0.005

Time Series

Constituent: Arsenic (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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
3/17/2021				0.0019 (J)		
3/18/2021	<0.005	<0.005	<0.005			0.001 (J)
3/19/2021					<0.005	

Time Series

Constituent: Barium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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		
1/19/2021				0.029	0.095		
3/11/2021	0.037						
3/12/2021		0.03		0.03	0.1		
3/16/2021			0.054				
3/17/2021						0.04	0.031

Time Series

Constituent: Barium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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
3/17/2021				0.077		
3/18/2021	0.042	0.082	0.041			0.067
3/19/2021					0.058	

Time Series

Constituent: Beryllium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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	<0.0005	<0.0005	<0.0005				
8/31/2016						<0.0005	
10/20/2016	<0.0005					<0.0005	
10/24/2016		<0.0005	0.0019 (J)				
1/25/2017	<0.0005	<0.0005	<0.0005				
1/31/2017						<0.0005	
5/23/2017		<0.0005	<0.0005			7E-05 (J)	
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						5.9E-05 (J)	
10/1/2018	<0.0005	<0.0005	<0.0005				
10/3/2018						6.5E-05 (J)	
8/21/2019	<0.0005	<0.0005	<0.0005				
8/22/2019						<0.0005	
10/21/2019	<0.0005						
10/22/2019		<0.0005	<0.0005				
10/23/2019						7.5E-05 (J)	<0.0005
1/3/2020							<0.0005
3/4/2020							<0.0005
3/24/2020	<0.0005	<0.0005					<0.0005
3/25/2020						<0.0005	
4/9/2020			<0.0005				
6/18/2020							<0.0005
7/21/2020							<0.0005
8/25/2020	4.7E-05 (J)	<0.0005	4.6E-05 (J)				
8/27/2020						5.7E-05 (J)	<0.0005
9/18/2020	<0.0005	<0.0005		<0.0005	<0.0005		
9/22/2020			9.9E-05 (J)				
9/24/2020						4.8E-05 (J)	<0.0005
11/10/2020				<0.0005			
11/11/2020					<0.0005		
12/15/2020				<0.0005	<0.0005		
1/19/2021				<0.0005	<0.0005		
3/11/2021	0.00014 (J)						
3/12/2021		5.4E-05 (J)		<0.0005	<0.0005		
3/16/2021			0.00018 (J)				
3/17/2021						5.9E-05 (J)	<0.0005

Time Series

Constituent: Beryllium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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	<0.0005	<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	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005
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					6.8E-05 (J)	<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			7.9E-05 (J)	<0.0005
8/23/2019			<0.0005	<0.0005		
10/22/2019			<0.0005	<0.0005	<0.0005	<0.0005
10/23/2019	<0.0005	<0.0005				
3/24/2020					<0.0005	
3/25/2020	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005
8/26/2020						<0.0005
8/27/2020	5E-05 (J)	<0.0005	<0.0005	<0.0005	4.9E-05 (J)	
9/24/2020	8.8E-05 (J)	<0.0005	<0.0005			
9/25/2020				<0.0005	6.6E-05 (J)	
9/28/2020						<0.0005
3/17/2021				<0.0005		
3/18/2021	6.1E-05 (J)	<0.0005	<0.0005			9.3E-05 (J)
3/19/2021					8.1E-05 (J)	

Time Series

Constituent: Boron (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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)		
1/19/2021				0.015 (J)	0.015 (J)		
3/11/2021	0.01 (J)						
3/12/2021		0.0061 (J)		0.0067 (J)	0.012 (J)		
3/16/2021			0.011 (J)				
3/17/2021						0.13	2.7

Time Series

Constituent: Boron (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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
3/17/2021				0.26		
3/18/2021	2.4	1.5	0.92			0.81
3/19/2021					1.5	

Time Series

Constituent: Cadmium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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	<0.0005	<0.0005	<0.0005				
8/31/2016						0.0002 (J)	
10/20/2016	<0.0005					0.0003 (J)	
10/24/2016		<0.0005	<0.0005				
1/25/2017	<0.0005	<0.0005	<0.0005				
1/31/2017						0.0001 (J)	
5/23/2017		<0.0005	<0.0005			0.0002 (J)	
5/24/2017	<0.0005						
8/10/2017	<0.0005	<0.0005	<0.0005			0.0002 (J)	
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						9.5E-05 (J)	
10/1/2018	<0.0005	<0.0005	<0.0005				
10/3/2018						0.00018 (J)	
8/21/2019	<0.0005	<0.0005	<0.0005				
8/22/2019						0.00014 (J)	
10/21/2019	<0.0005						
10/22/2019		<0.0005	<0.0005				
10/23/2019						0.0002 (J)	0.00026 (J)
1/3/2020							0.0002 (J)
3/4/2020							0.00026 (J)
3/24/2020	<0.0005	<0.0005					0.00068 (J)
3/25/2020						0.00014 (J)	
4/9/2020			<0.0005				
6/18/2020							0.00047 (J)
7/21/2020							0.00083 (J)
8/25/2020	<0.0005	<0.0005	<0.0005				
8/27/2020						0.00019 (J)	0.00038 (J)
9/18/2020	<0.0005	<0.0005		<0.0005	<0.0005		
9/22/2020			<0.0005				
9/24/2020						0.00014 (J)	0.00032 (J)
11/10/2020				<0.0005			
11/11/2020					<0.0005		
12/15/2020				<0.0005	<0.0005		
1/19/2021				<0.0005	<0.0005		
3/11/2021	<0.0005						
3/12/2021		<0.0005		<0.0005	<0.0005		
3/16/2021			<0.0005				
3/17/2021						<0.0005	0.00094

Time Series

Constituent: Cadmium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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)	<0.0005	0.0001 (J)	<0.0005	0.0008 (J)	<0.0005
10/20/2016					0.0008 (J)	<0.0005
10/24/2016	0.0008 (J)					
10/25/2016		<0.0005	8E-05 (J)	<0.0005		
1/27/2017					0.0007 (J)	
1/31/2017	0.0006 (J)	<0.0005	9E-05 (J)	<0.0005		<0.0005
5/23/2017	0.0006 (J)				0.0005 (J)	<0.0005
5/24/2017		<0.0005	0.0001 (J)	<0.0005		
8/10/2017	0.0007 (J)	<0.0005	<0.0005	<0.0005	0.0004 (J)	<0.0005
11/14/2017	0.0007 (J)	<0.0005	<0.0005	<0.0005	0.0005 (J)	<0.0005
6/6/2018	0.00073 (J)	<0.0005	0.00012 (J)	<0.0005		
6/7/2018					0.00049 (J)	<0.0005
10/2/2018		<0.0005	0.0001 (J)	<0.0005		
10/3/2018	0.00078 (J)				0.00079 (J)	<0.0005
8/22/2019	0.0008 (J)	<0.0005			0.00064 (J)	<0.0005
8/23/2019			0.00011 (J)	<0.0005		
10/22/2019			<0.0005	<0.0005	0.00068 (J)	<0.0005
10/23/2019	0.00091 (J)	<0.0005				
3/24/2020					0.00079 (J)	
3/25/2020	0.00068 (J)	<0.0005	<0.0005	<0.0005		<0.0005
8/26/2020						<0.0005
8/27/2020	0.00082 (J)	<0.0005	<0.0005	<0.0005	0.0008 (J)	
9/24/2020	0.00076 (J)	<0.0005	<0.0005			
9/25/2020				<0.0005	0.00089 (J)	
9/28/2020						<0.0005
3/17/2021				<0.0005		
3/18/2021	0.00068	<0.0005	<0.0005			<0.0005
3/19/2021					0.001	

Time Series

Constituent: Calcium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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		
1/19/2021				72.5	58.9		
3/11/2021	53.2						
3/12/2021		6.9		69.2	57.5		
3/16/2021			8.6				
3/17/2021						21.8	111

Time Series

Constituent: Calcium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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
3/17/2021				37.3		
3/18/2021	83.7	97.7	56			85.4
3/19/2021					87.3	

Time Series

Constituent: Chloride (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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		
1/19/2021				2.8	2.7		
3/11/2021	3.4						
3/12/2021		5.3		2.7	2.6		
3/16/2021			1.6				
3/17/2021						5.5	6.9

Time Series

Constituent: Chloride (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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
3/17/2021				4.7		
3/18/2021	6.2	4.3	3.2			4.3
3/19/2021					24.9	

Time Series

Constituent: Chromium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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	0.0038 (J)	<0.005				
8/31/2016						<0.005	
10/20/2016	<0.005					<0.005	
10/24/2016		0.0039 (J)	0.001 (J)				
1/25/2017	0.0029 (J)	0.0038 (J)	0.0012 (J)				
1/31/2017						<0.005	
5/23/2017		0.0038 (J)	0.0012 (J)			0.0006 (J)	
5/24/2017	0.0004 (J)						
8/10/2017	<0.005	0.0039 (J)	0.0019 (J)			<0.005	
11/13/2017	<0.005	0.0038 (J)					
11/14/2017			0.0016 (J)			<0.005	
6/4/2018	<0.005	0.0037 (J)					
6/5/2018			<0.005				
6/6/2018						<0.005	
10/1/2018	<0.005	0.0036 (J)	0.0023 (J)				
10/3/2018						<0.005	
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						<0.005	<0.005
1/3/2020							0.00063 (J)
3/4/2020							<0.005
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							<0.005
7/21/2020							<0.005
8/25/2020	0.0013 (J)	0.0039 (J)	0.0031 (J)				
8/27/2020						<0.005	<0.005
9/18/2020	0.00077 (J)	0.0037 (J)		0.0039 (J)	<0.005		
9/22/2020			0.0046 (J)				
9/24/2020						<0.005	<0.005
11/10/2020				<0.005			
11/11/2020					<0.005		
12/15/2020				<0.005	0.0013 (J)		
1/19/2021				<0.005	0.0015 (J)		
3/11/2021	0.002 (J)						
3/12/2021		0.0045 (J)		<0.005	0.00062 (J)		
3/16/2021			0.0061				
3/17/2021						0.00075 (J)	<0.005

Time Series

Constituent: Chromium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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	0.00063 (J)	<0.005			<0.005	<0.005
8/23/2019			<0.005	<0.005		
10/22/2019			<0.005	0.00062 (J)	<0.005	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)	<0.005	<0.005	<0.005	0.00057 (J)	
9/24/2020	0.00081 (J)	0.00064 (J)	<0.005			
9/25/2020				<0.005	0.00067 (J)	
9/28/2020						0.0017 (J)
3/17/2021				<0.005		
3/18/2021	0.003 (J)	0.00058 (J)	<0.005			0.0021 (J)
3/19/2021					0.001 (J)	

Time Series

Constituent: Cobalt (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV
 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)		
1/19/2021				<0.005	<0.005		
3/11/2021	<0.005						
3/12/2021		<0.005		<0.005	<0.005		
3/16/2021			0.0013 (J)				
3/17/2021						0.0023 (J)	0.0012 (J)

Time Series

Constituent: Cobalt (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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)
3/17/2021				0.003 (J)		
3/18/2021	0.0021 (J)	0.00045 (J)	<0.005			0.0012 (J)
3/19/2021					0.011	

Time Series

Constituent: Combined Radium 226 & 228 (pCi/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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)		
1/19/2021				0.176 (U)	1.35 (U)		
3/11/2021	0.354 (U)						
3/12/2021		0.164 (U)		0 (U)	0.829 (U)		
3/16/2021			0.559 (U)				
3/17/2021						0.248 (U)	0.401 (U)

Time Series

Constituent: Combined Radium 226 & 228 (pCi/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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)
3/17/2021				0.556 (U)		
3/18/2021	0.274 (U)	0.252 (U)	0.145 (U)			0.323 (U)
3/19/2021					0.303 (U)	

Time Series

Constituent: Fluoride (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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)		
1/19/2021				0.057 (J)	0.079 (J)		
3/11/2021	0.057 (J)						
3/12/2021		<0.1		0.062 (J)	0.085 (J)		
3/16/2021			0.18				
3/17/2021						<0.1	<0.1

Time Series

Constituent: Fluoride (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV
 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)
3/17/2021				0.089 (J)		
3/18/2021	<0.1	<0.1	<0.1			0.079 (J)
3/19/2021					<0.1	

Time Series

Constituent: Lead (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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)	<0.001	<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			0.0009 (J)	
5/24/2017	<0.001						
8/10/2017	<0.001	<0.001	0.0001 (J)			<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	7.1E-05 (J)				
8/22/2019						<0.001	
10/21/2019	0.00016 (J)						
10/22/2019		<0.001	7.3E-05 (J)				
10/23/2019						<0.001	<0.001
1/3/2020							<0.001
3/4/2020							0.00011 (J)
3/24/2020	0.00058 (J)	0.00016 (J)					<0.001
3/25/2020						<0.001	
4/9/2020			0.00039 (J)				
6/18/2020							<0.001
7/21/2020							<0.001
8/25/2020	0.00036 (J)	0.00011 (J)	0.00022 (J)				
8/27/2020						<0.001	<0.001
9/18/2020	0.00026 (J)	6.5E-05 (J)		<0.001	<0.001		
9/22/2020			0.00096 (J)				
9/24/2020						<0.001	<0.001
11/10/2020				<0.001			
11/11/2020					<0.001		
12/15/2020				<0.001	0.00015 (J)		
1/19/2021				3.8E-05 (J)	5.6E-05 (J)		
3/11/2021	0.0011						
3/12/2021		0.00017 (J)		<0.001	4.8E-05 (J)		
3/16/2021			0.0016				
3/17/2021						<0.001	<0.001

Time Series

Constituent: Lead (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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	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)	<0.001		0.0001 (J)
8/26/2020						0.00036 (J)
8/27/2020	0.00018 (J)	<0.001	<0.001	<0.001	0.00014 (J)	
9/24/2020	0.00028 (J)	4.9E-05 (J)	0.00034 (J)			
9/25/2020				<0.001	0.00019 (J)	
9/28/2020						0.00022 (J)
3/17/2021				<0.001		
3/18/2021	0.00024 (J)	5.8E-05 (J)	9.1E-05 (J)			0.00088 (J)
3/19/2021					0.00038 (J)	

Time Series

Constituent: Lithium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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)		
1/19/2021				0.003 (J)	0.0032 (J)		
3/11/2021	0.0047 (J)						
3/12/2021		<0.03		0.0031 (J)	0.0031 (J)		
3/16/2021			0.0026 (J)				
3/17/2021						<0.03	0.0012 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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)
3/17/2021				<0.03		
3/18/2021	0.0018 (J)	0.0042 (J)	0.0011 (J)			0.0029 (J)
3/19/2021					0.0035 (J)	

Time Series

Constituent: Mercury (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV
 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		
1/19/2021				<0.0005	<0.0005		

Time Series

Constituent: Mercury (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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 4/26/2021 5:22 PM View: Appendix III & IV

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)		
1/19/2021				<0.01	0.0018 (J)		

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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 4/26/2021 5:22 PM View: Appendix III & IV

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		
1/19/2021				7.32	7.4		
3/11/2021	7.2						
3/12/2021		5.6		7.52	7.51		
3/16/2021			6.14				
3/17/2021						5.41	5.78

Time Series

Constituent: pH (s.u.) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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
3/17/2021				6.55		
3/18/2021	5.51	6.57	6.2			7.11
3/19/2021					6.14	

Time Series

Constituent: Selenium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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		
1/19/2021				<0.01	<0.01		

Time Series

Constituent: Selenium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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 4/26/2021 5:22 PM View: Appendix III & IV

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		
1/19/2021				2.6	3.9		
3/11/2021	1.5						
3/12/2021		0.52 (J)		1.9	4.7		
3/16/2021			7.7				
3/17/2021						107	332

Time Series

Constituent: Sulfate (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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
3/17/2021				28.3		
3/18/2021	286	196	128			87.8
3/19/2021					162	

Time Series

Constituent: Thallium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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		
1/19/2021				<0.001	<0.001		

Time Series

Constituent: Thallium (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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 4/26/2021 5:22 PM View: Appendix III & IV

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		
1/19/2021				199	224		
3/11/2021	207						
3/12/2021		56		217	204		
3/16/2021			99				
3/17/2021						213	626

Time Series

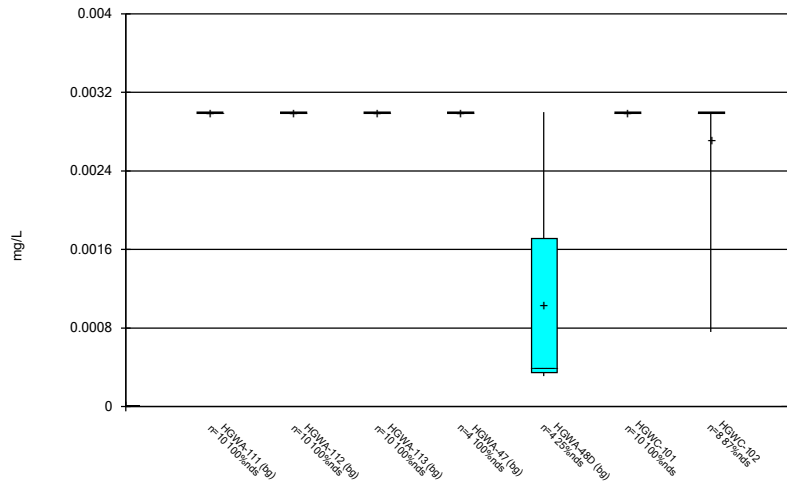
Constituent: Total Dissolved Solids (mg/L) Analysis Run 4/26/2021 5:22 PM View: Appendix III & IV

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
3/17/2021				171		
3/18/2021	465	410	255			328
3/19/2021					371	

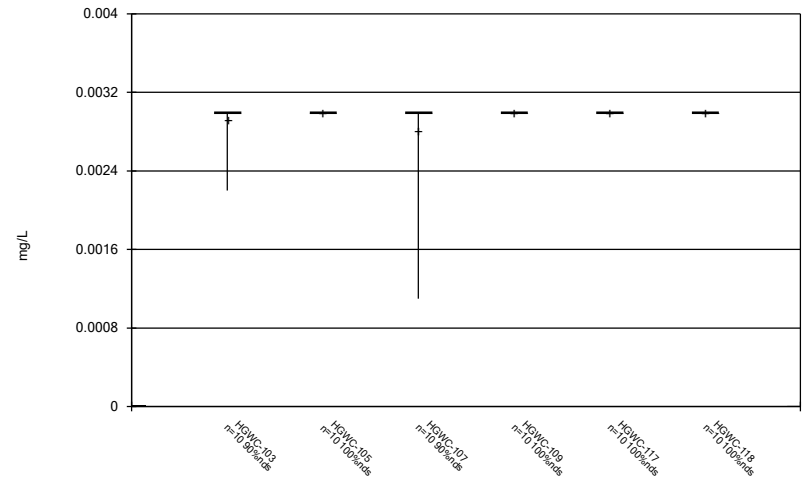
FIGURE B.

Box & Whiskers Plot



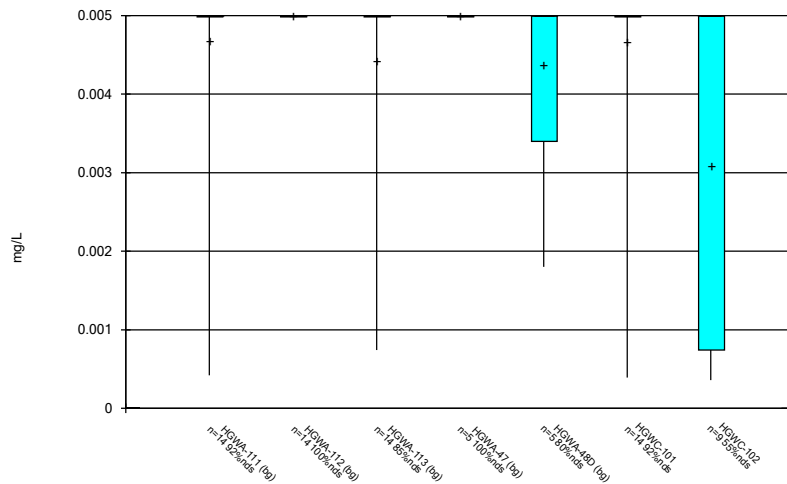
Constituent: Antimony Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



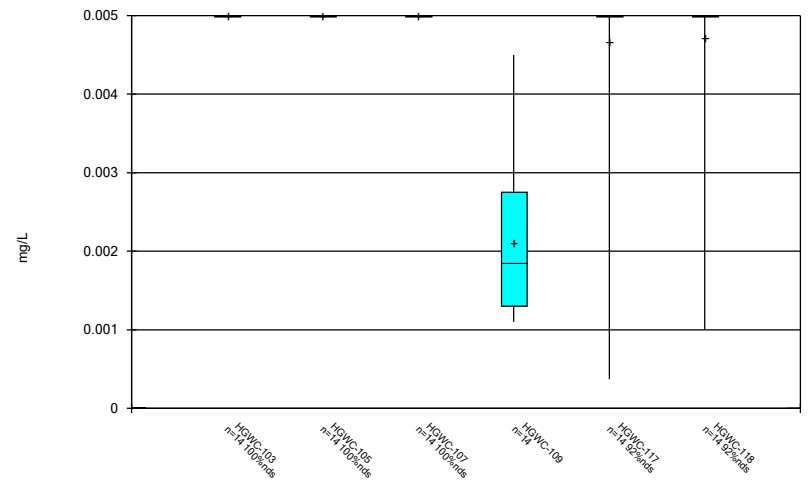
Constituent: Antimony Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



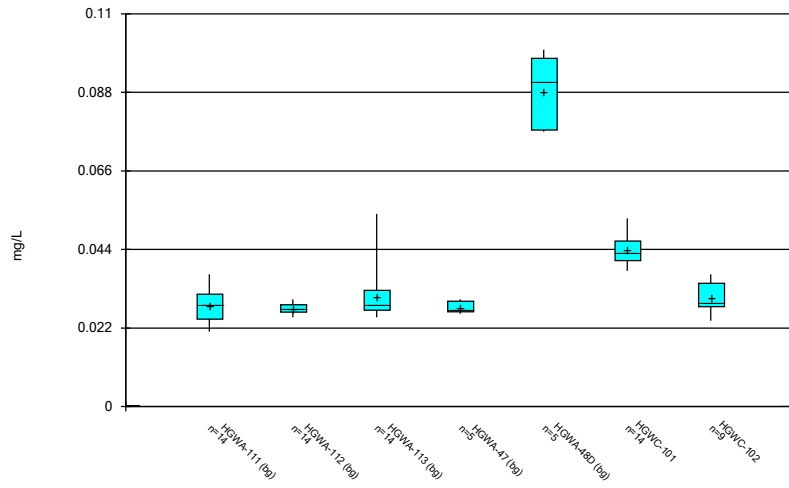
Constituent: Arsenic Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



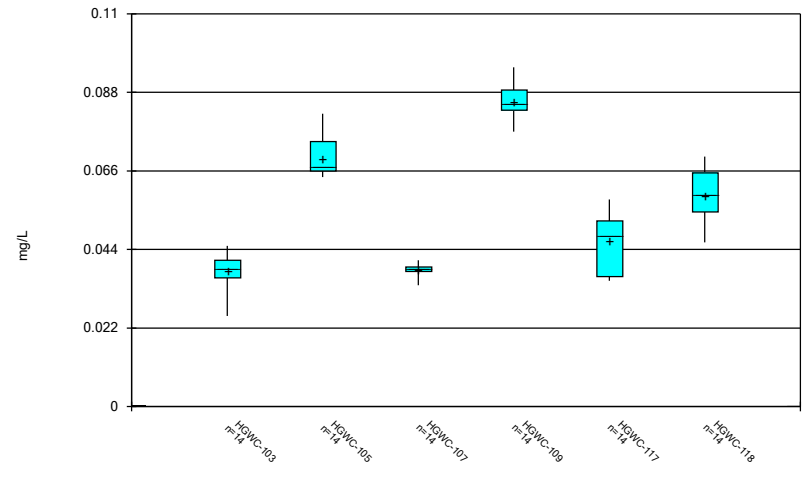
Constituent: Arsenic Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



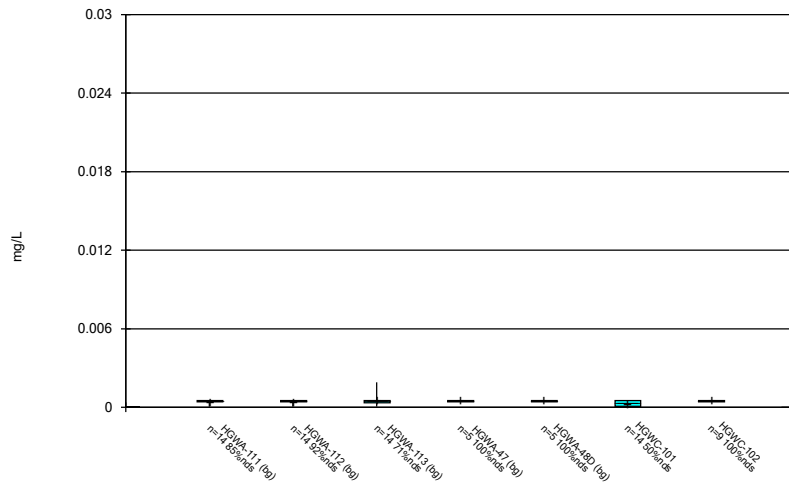
Constituent: Barium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



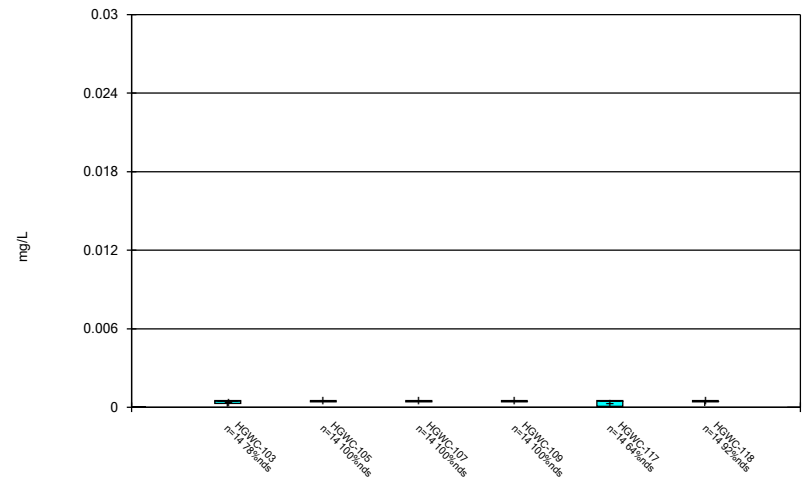
Constituent: Barium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



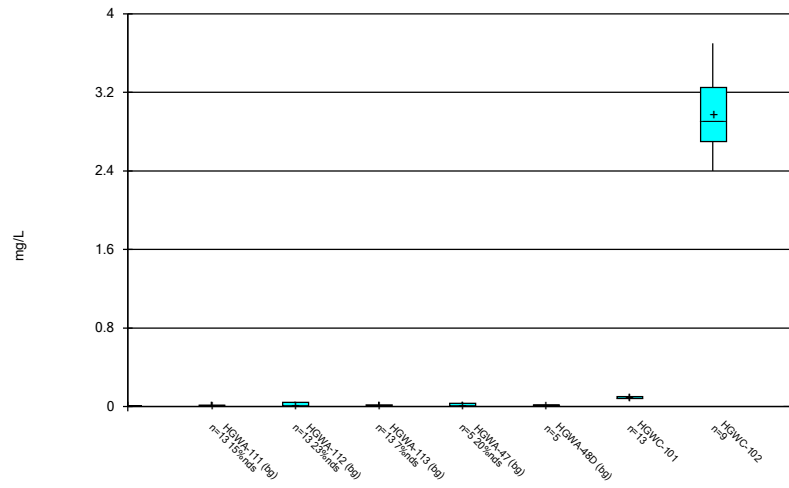
Constituent: Beryllium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



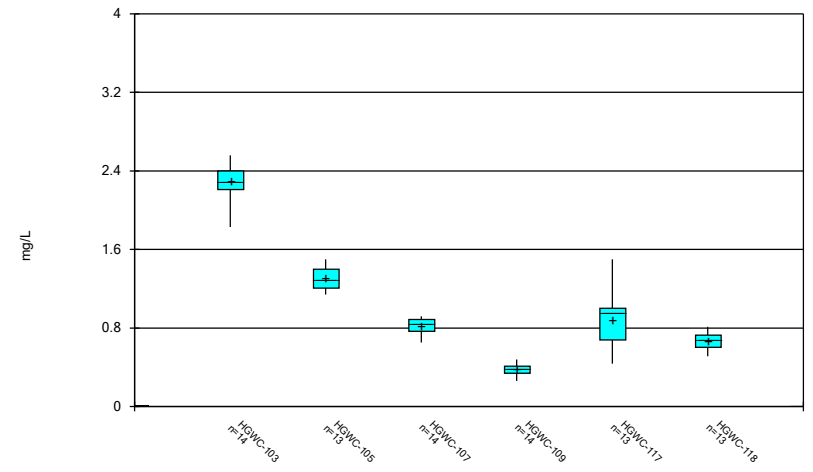
Constituent: Beryllium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



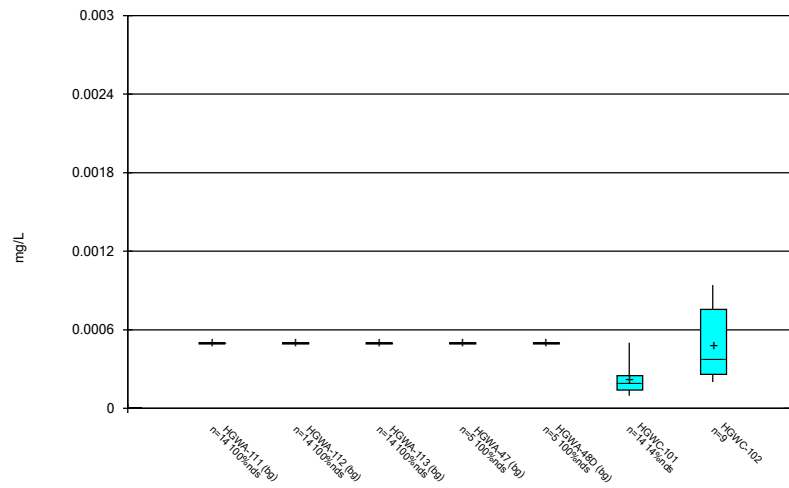
Constituent: Boron Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



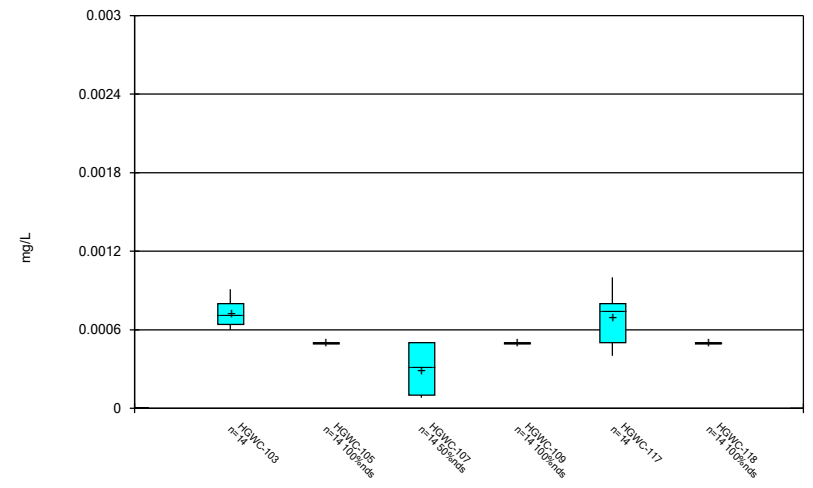
Constituent: Boron Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



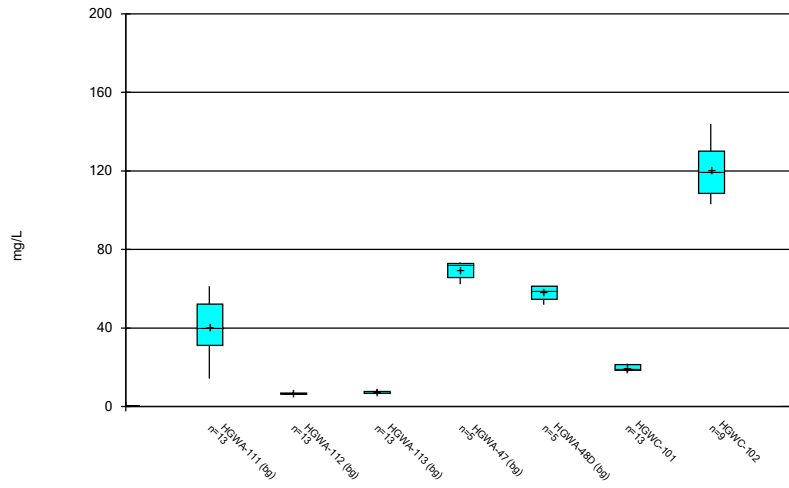
Constituent: Cadmium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



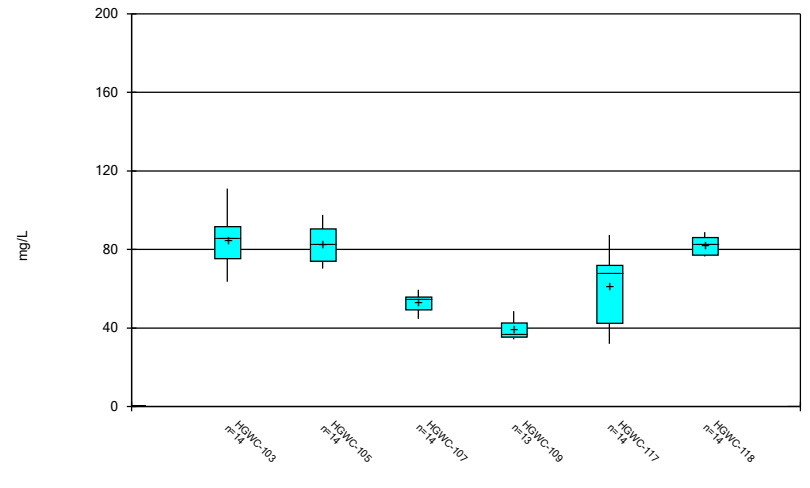
Constituent: Cadmium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



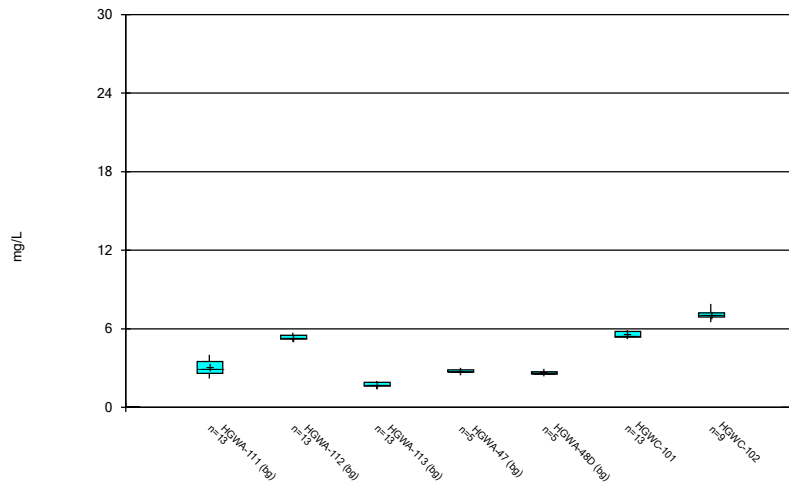
Constituent: Calcium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



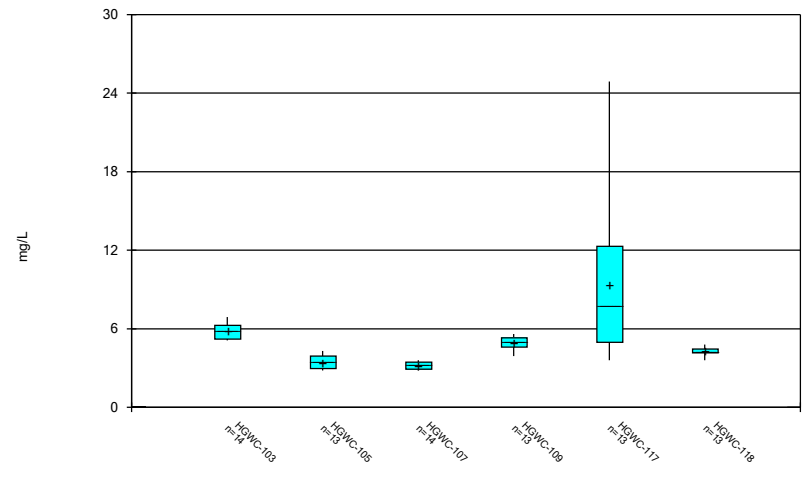
Constituent: Calcium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



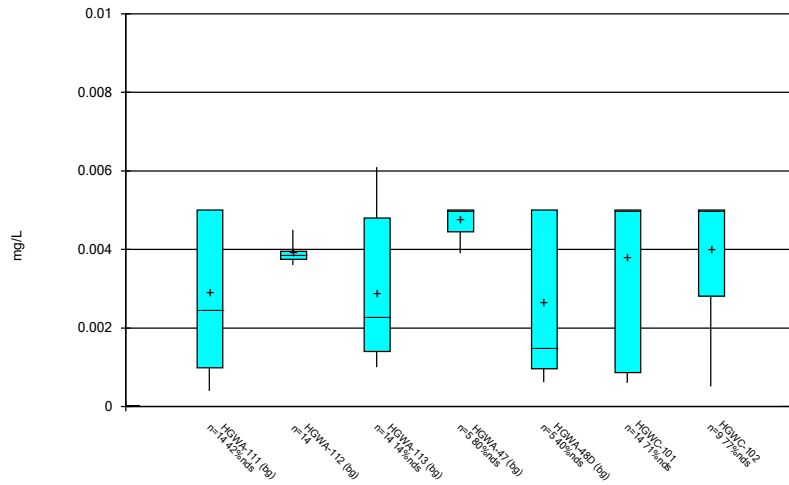
Constituent: Chloride Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



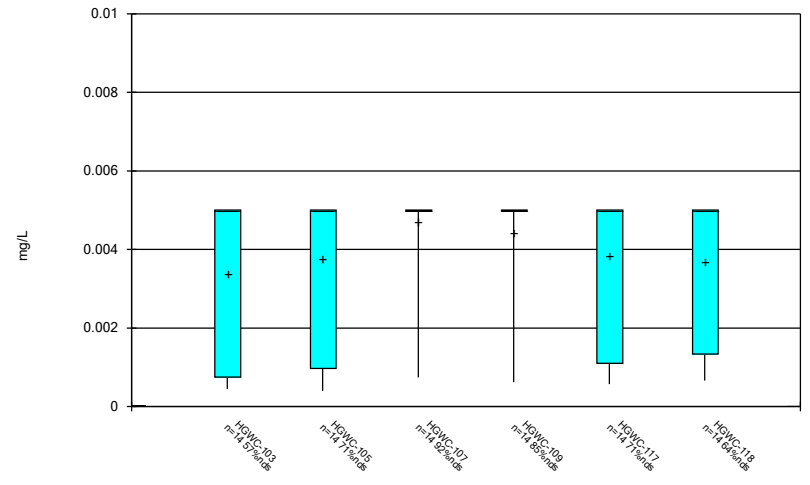
Constituent: Chloride Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



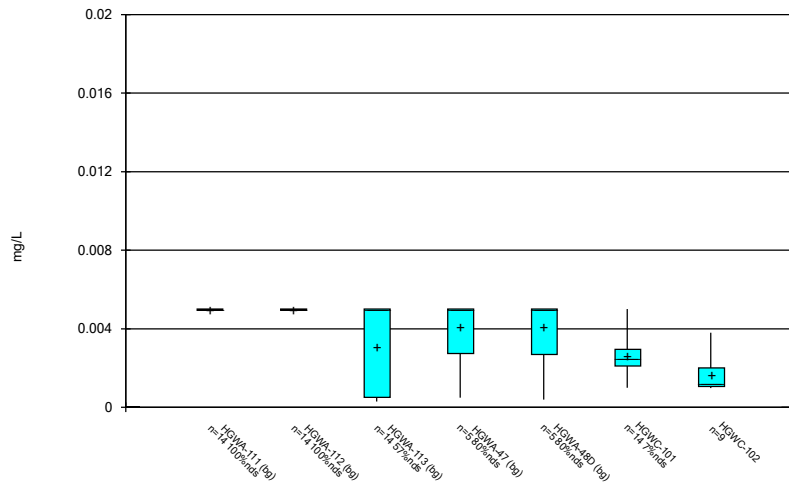
Constituent: Chromium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



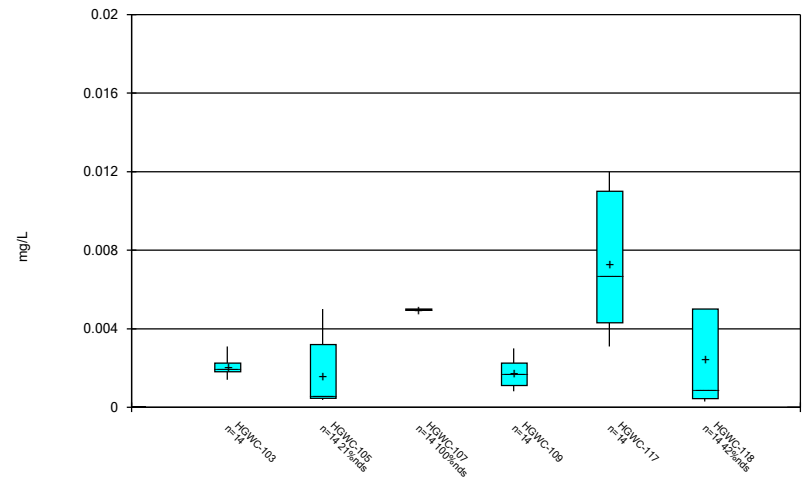
Constituent: Chromium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



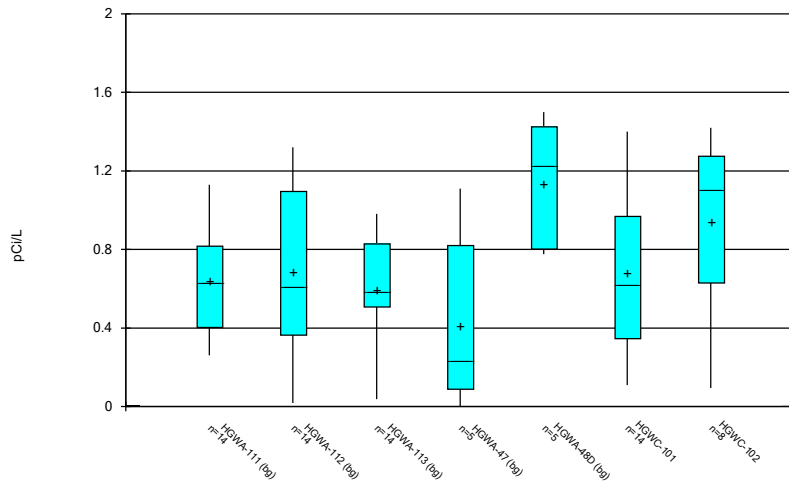
Constituent: Cobalt Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



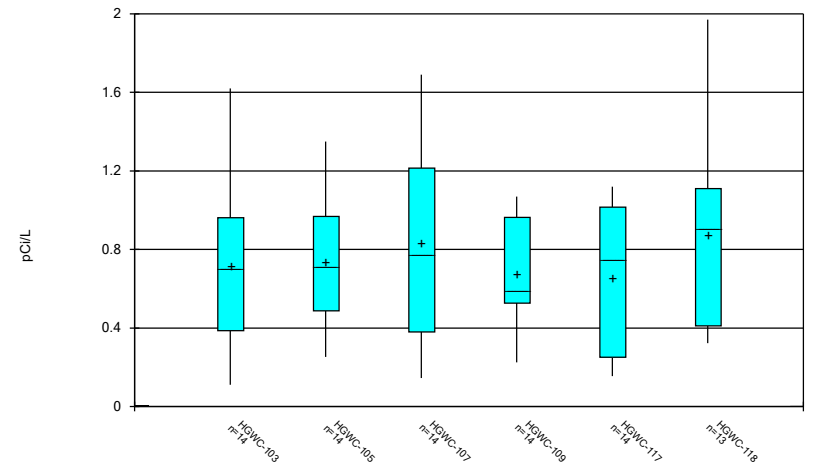
Constituent: Cobalt Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



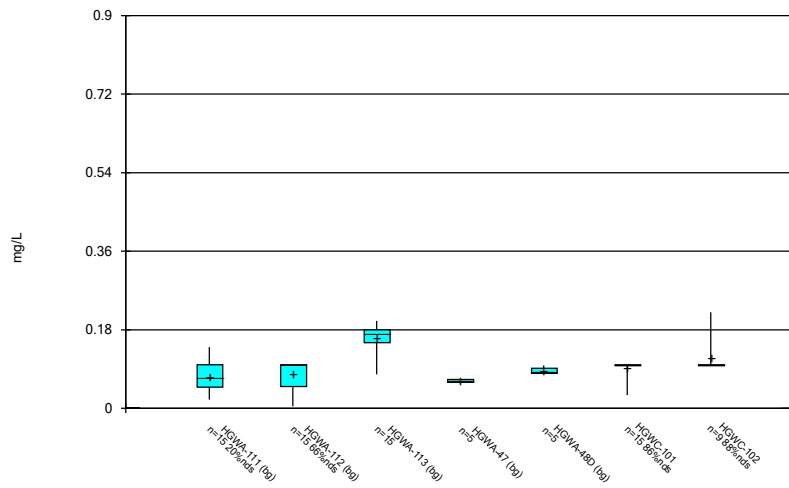
Constituent: Combined Radium 226 & 228 Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



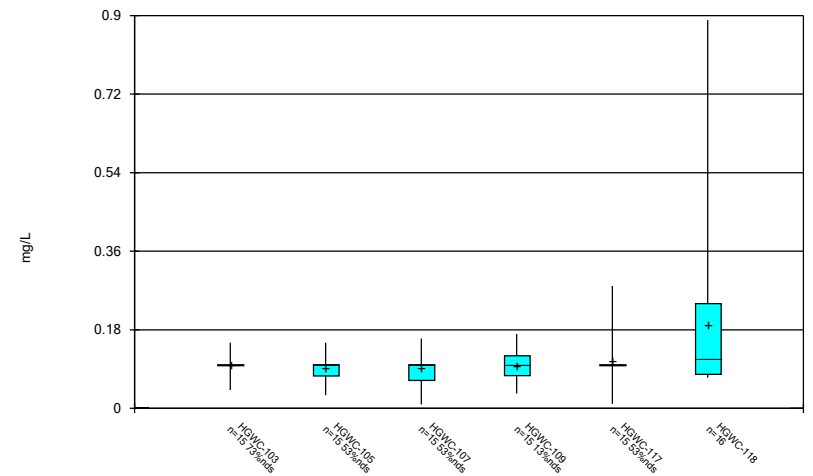
Constituent: Combined Radium 226 & 228 Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



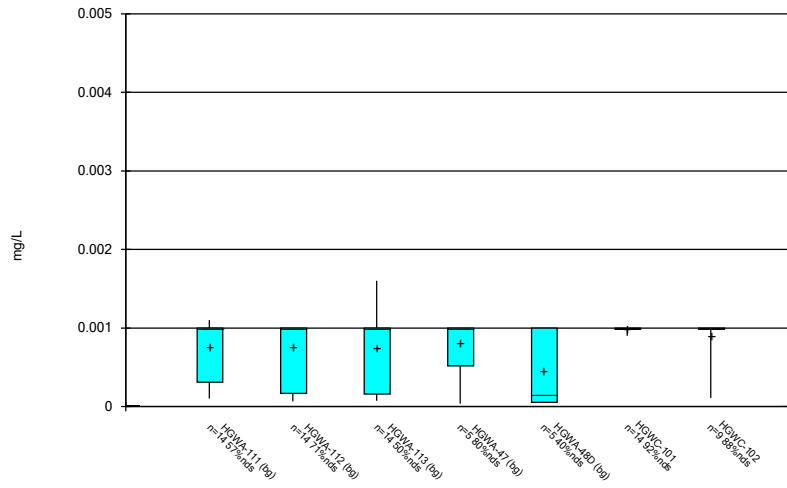
Constituent: Fluoride Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



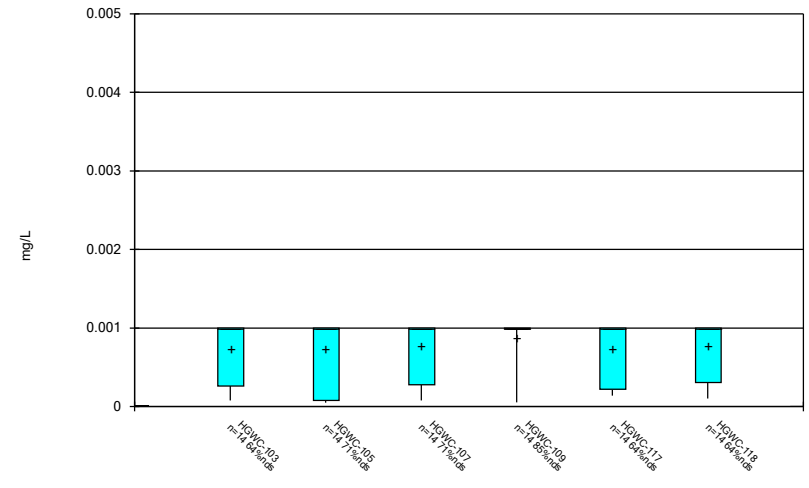
Constituent: Fluoride Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



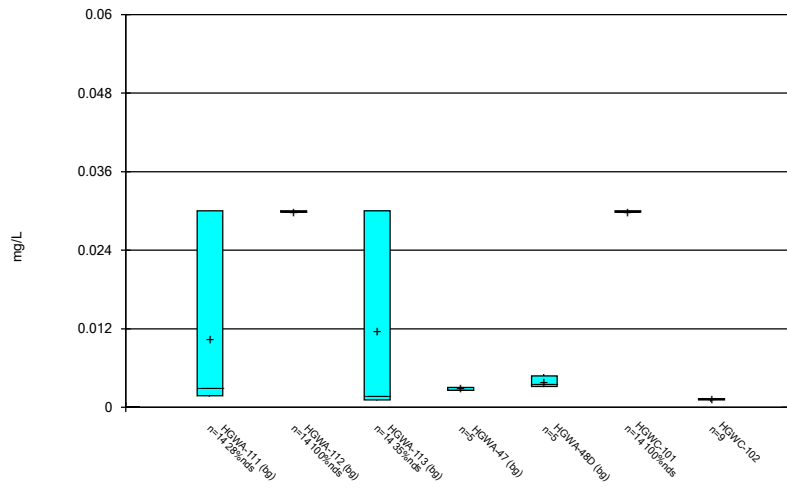
Constituent: Lead Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



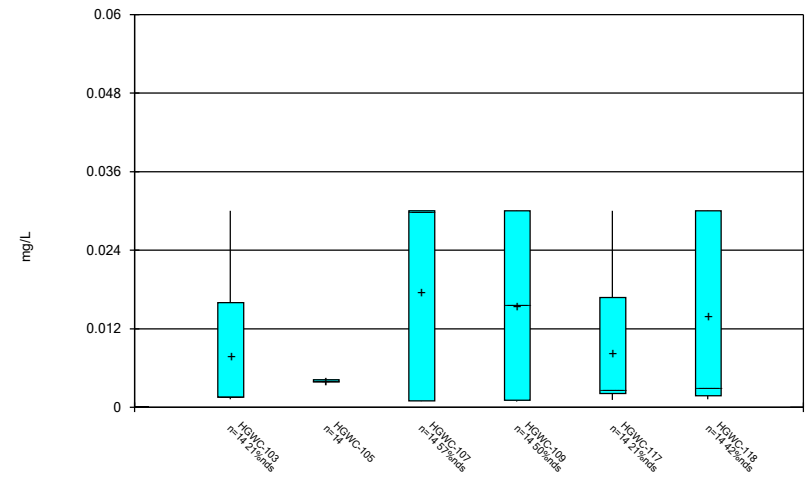
Constituent: Lead Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



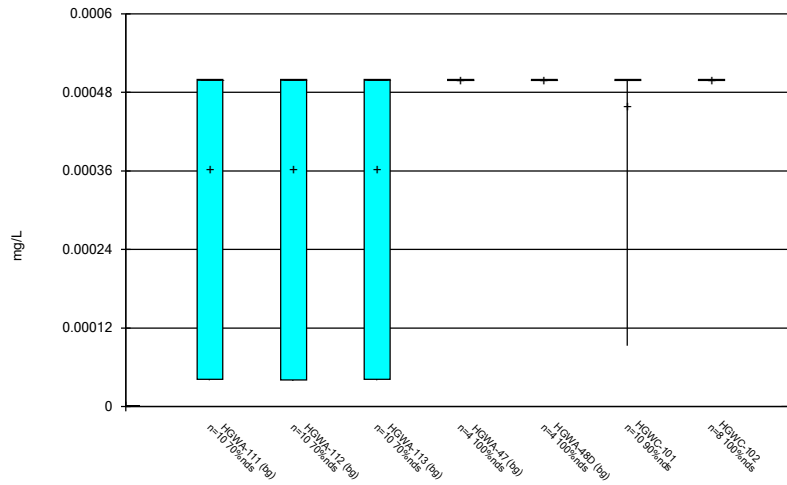
Constituent: Lithium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



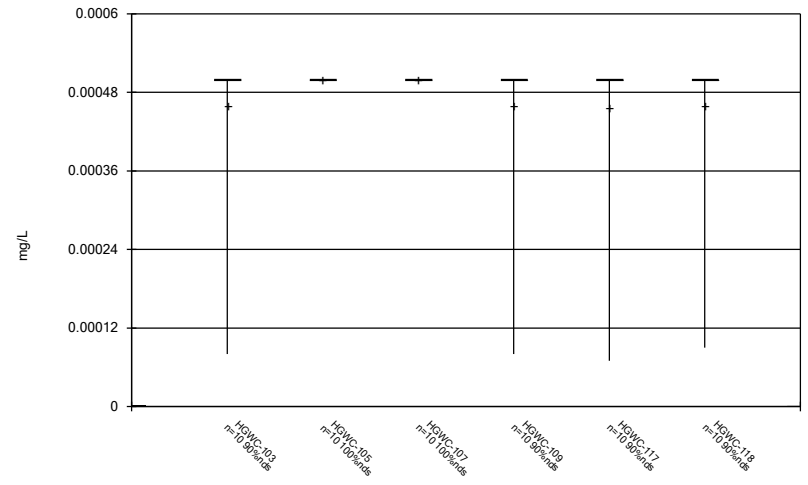
Constituent: Lithium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



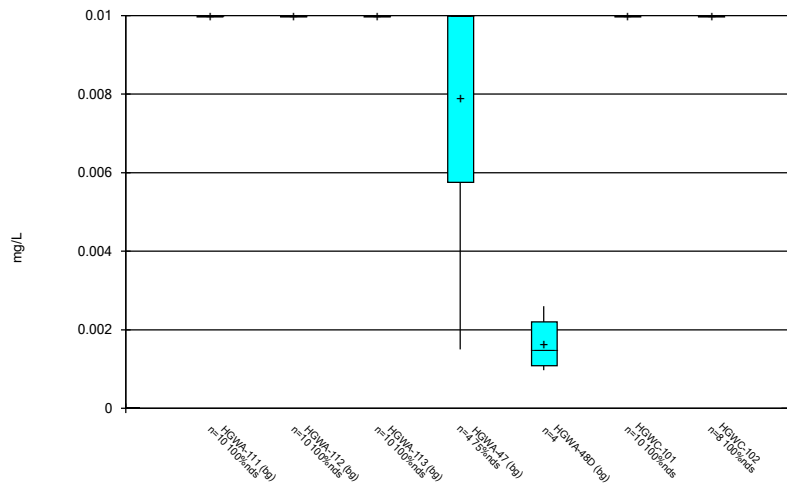
Constituent: Mercury Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



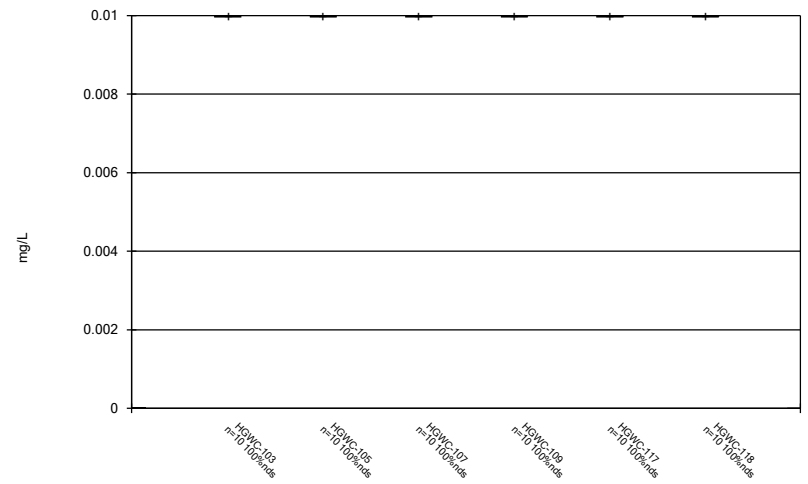
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



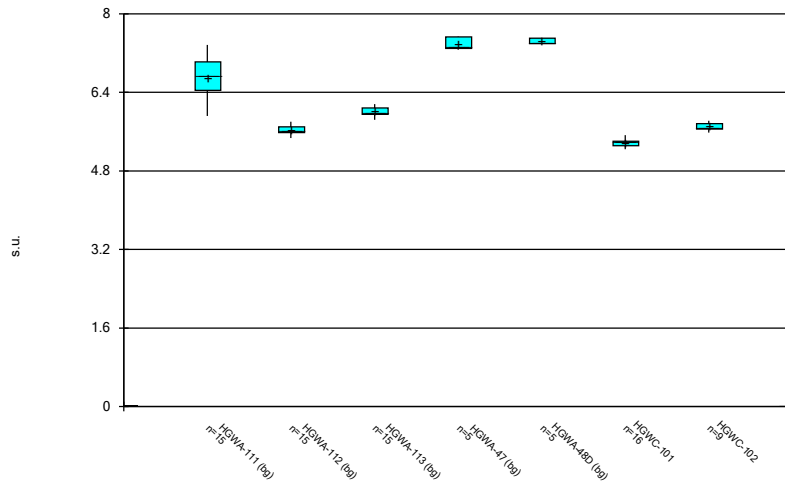
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



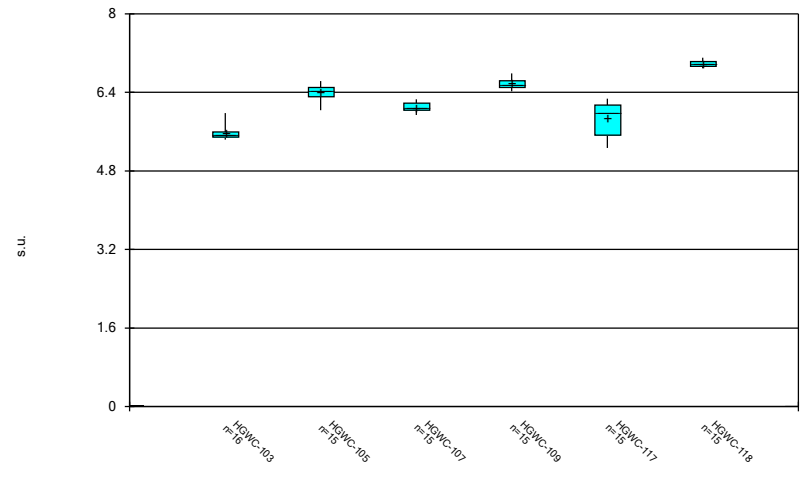
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



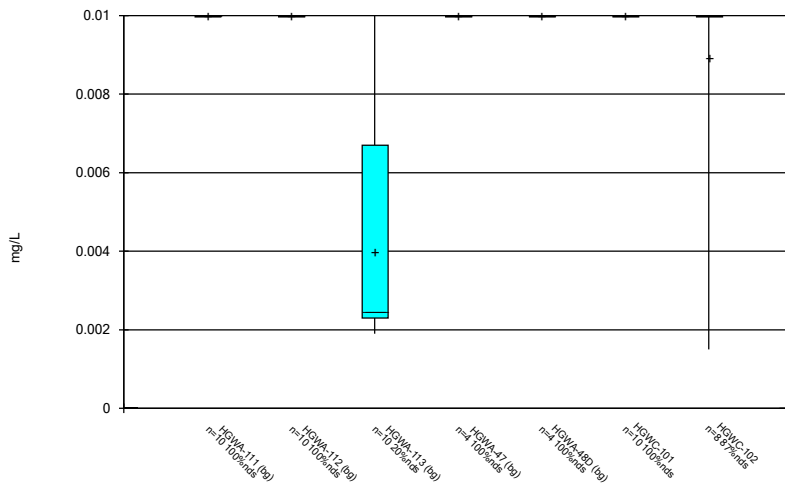
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



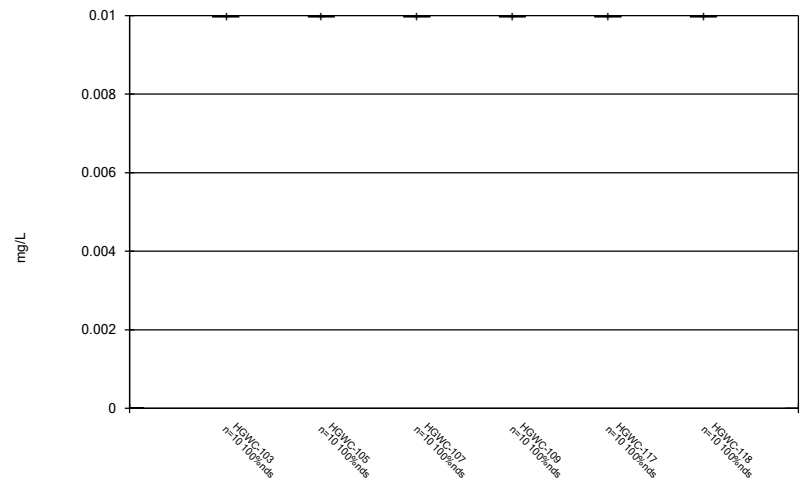
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



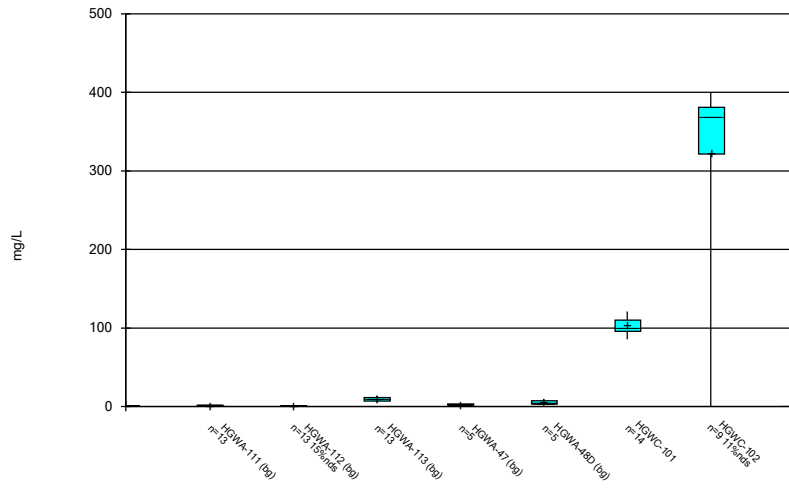
Constituent: Selenium Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



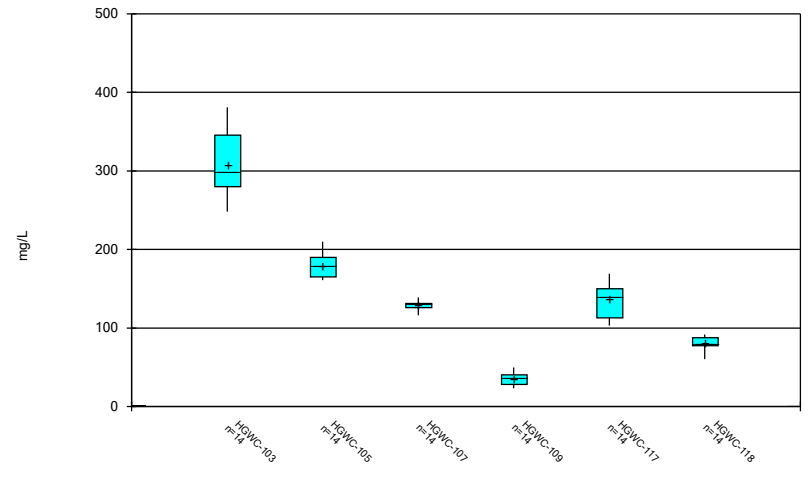
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 Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



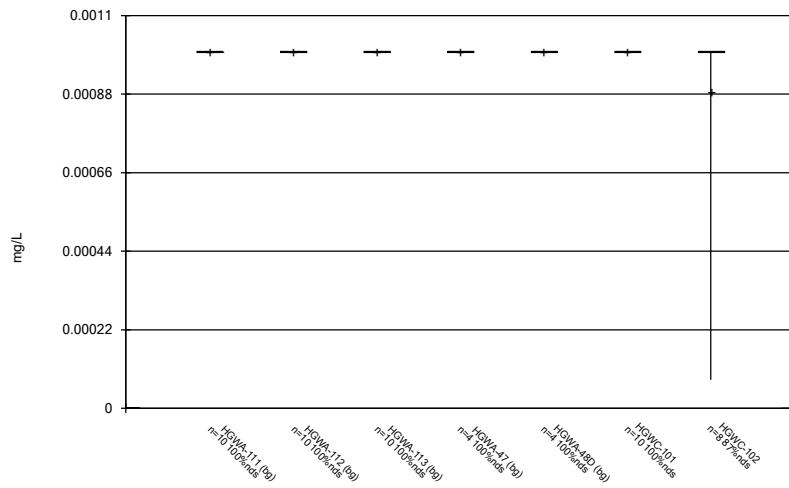
Constituent: Sulfate Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



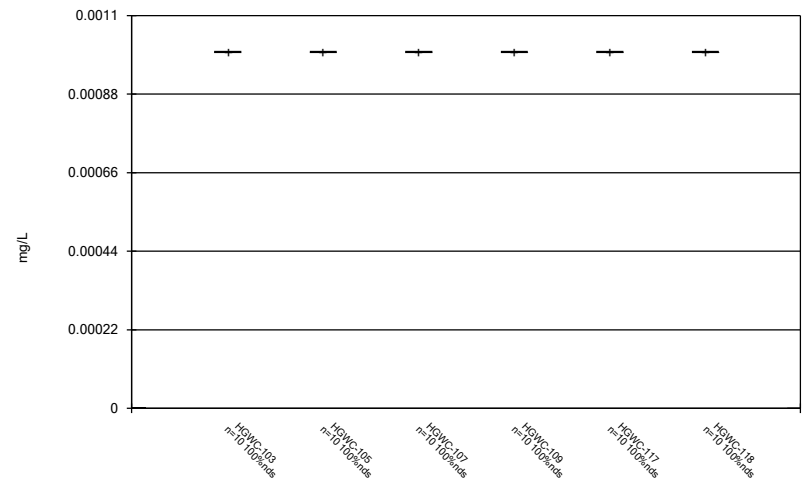
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Box & Whiskers Plot



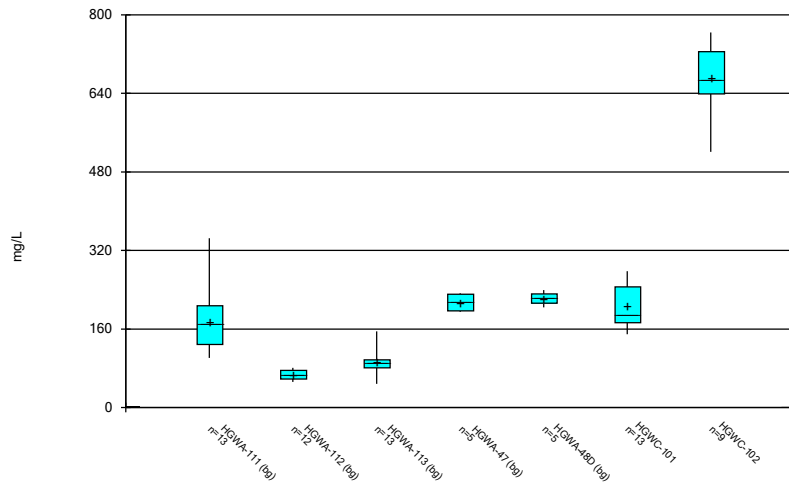
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Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



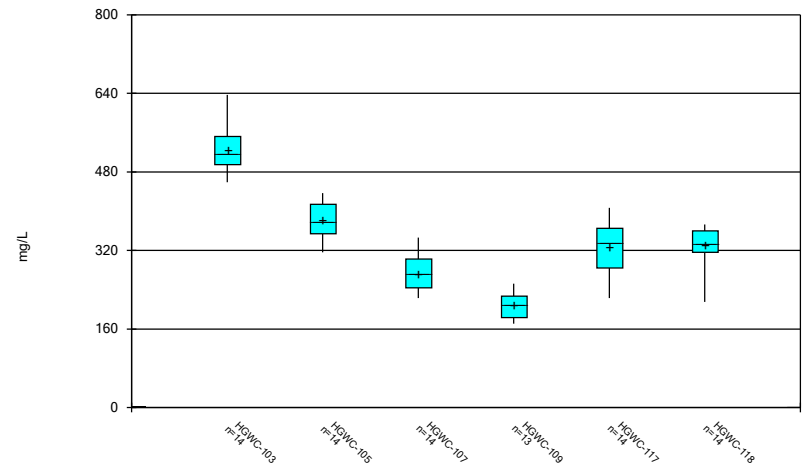
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Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 4/26/2021 5:23 PM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Outlier Summary

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/21/2021, 3:42 PM

HGWA-112 Total Dissolved Solids (mg/L)

1/25/2017

152 (o)

FIGURE C.

FIGURE D.

Appendix III Interwell Prediction Limit - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/15/2021, 4:46 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	3/17/2021	0.13	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-102	0.05	n/a	3/17/2021	2.7	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-103	0.05	n/a	3/18/2021	2.4	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-105	0.05	n/a	3/18/2021	1.5	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-107	0.05	n/a	3/18/2021	0.92	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-109	0.05	n/a	3/17/2021	0.26	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-117	0.05	n/a	3/19/2021	1.5	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-118	0.05	n/a	3/18/2021	0.81	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-102	73.3	n/a	3/17/2021	111	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-103	73.3	n/a	3/18/2021	83.7	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	73.3	n/a	3/18/2021	97.7	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-117	73.3	n/a	3/19/2021	87.3	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	73.3	n/a	3/18/2021	85.4	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-102	5.7	n/a	3/17/2021	6.9	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-103	5.7	n/a	3/18/2021	6.2	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-117	5.7	n/a	3/19/2021	24.9	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-101	7.54	5.47	3/17/2021	5.41	Yes	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	3/17/2021	107	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-102	14	n/a	3/17/2021	332	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	3/18/2021	286	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	3/18/2021	196	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-107	14	n/a	3/18/2021	128	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	3/17/2021	28.3	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-117	14	n/a	3/19/2021	162	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-118	14	n/a	3/18/2021	87.8	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-102	332.6	n/a	3/17/2021	626	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-103	332.6	n/a	3/18/2021	465	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	332.6	n/a	3/18/2021	410	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	332.6	n/a	3/19/2021	371	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2

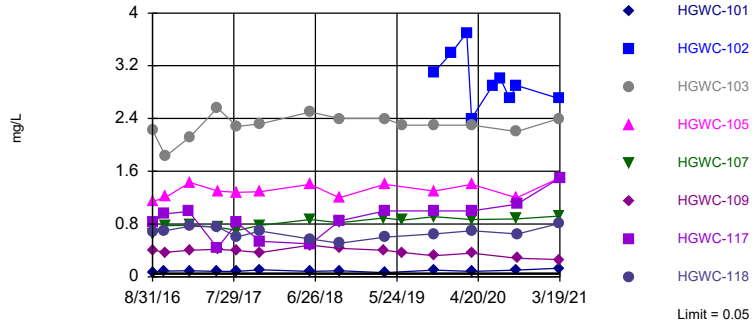
Appendix III Interwell Prediction Limit - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/15/2021, 4:46 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	3/17/2021	0.13	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-102	0.05	n/a	3/17/2021	2.7	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-103	0.05	n/a	3/18/2021	2.4	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-105	0.05	n/a	3/18/2021	1.5	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-107	0.05	n/a	3/18/2021	0.92	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-109	0.05	n/a	3/17/2021	0.26	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-117	0.05	n/a	3/19/2021	1.5	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-118	0.05	n/a	3/18/2021	0.81	Yes	49	n/a	n/a	14.29	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-101	73.3	n/a	3/17/2021	21.8	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-102	73.3	n/a	3/17/2021	111	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-103	73.3	n/a	3/18/2021	83.7	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	73.3	n/a	3/18/2021	97.7	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-107	73.3	n/a	3/18/2021	56	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-109	73.3	n/a	3/17/2021	37.3	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-117	73.3	n/a	3/19/2021	87.3	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	73.3	n/a	3/18/2021	85.4	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-101	5.7	n/a	3/17/2021	5.5	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-102	5.7	n/a	3/17/2021	6.9	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-103	5.7	n/a	3/18/2021	6.2	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-105	5.7	n/a	3/18/2021	4.3	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-107	5.7	n/a	3/18/2021	3.2	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-109	5.7	n/a	3/17/2021	4.7	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-117	5.7	n/a	3/19/2021	24.9	Yes	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-118	5.7	n/a	3/18/2021	4.3	No	49	n/a	n/a	0	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-101	0.1716	n/a	3/17/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-102	0.1716	n/a	3/17/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-103	0.1716	n/a	3/18/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-105	0.1716	n/a	3/18/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-107	0.1716	n/a	3/18/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-109	0.1716	n/a	3/17/2021	0.089J	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-117	0.1716	n/a	3/19/2021	0.1ND	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-118	0.1716	n/a	3/18/2021	0.079J	No	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.0009403	Param Inter 1 of 2
pH (s.u.)	HGWC-101	7.54	5.47	3/17/2021	5.41	Yes	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-102	7.54	5.47	3/17/2021	5.78	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-103	7.54	5.47	3/18/2021	5.51	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-105	7.54	5.47	3/18/2021	6.57	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-107	7.54	5.47	3/18/2021	6.2	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-109	7.54	5.47	3/17/2021	6.55	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-117	7.54	5.47	3/19/2021	6.14	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-118	7.54	5.47	3/18/2021	7.11	No	55	n/a	n/a	0	n/a	n/a	0.001254	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	3/17/2021	107	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-102	14	n/a	3/17/2021	332	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	3/18/2021	286	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	3/18/2021	196	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-107	14	n/a	3/18/2021	128	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	3/17/2021	28.3	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-117	14	n/a	3/19/2021	162	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-118	14	n/a	3/18/2021	87.8	Yes	49	n/a	n/a	4.082	n/a	n/a	0.0007731	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-101	332.6	n/a	3/17/2021	213	No	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-102	332.6	n/a	3/17/2021	626	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-103	332.6	n/a	3/18/2021	465	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	332.6	n/a	3/18/2021	410	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-107	332.6	n/a	3/18/2021	255	No	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-109	332.6	n/a	3/17/2021	171	No	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	332.6	n/a	3/19/2021	371	Yes	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-118	332.6	n/a	3/18/2021	328	No	48	4.769	0.5223	0	None	ln(x)	0.0009403	Param Inter 1 of 2

Exceeds Limit: HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Prediction Limit
Interwell Non-parametric

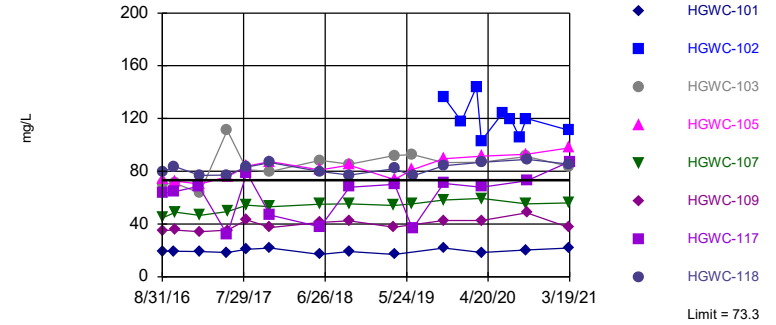


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 49 background values. 14.29% NDs. Annual per-constituent alpha = 0.0123. Individual comparison alpha = 0.0007731 (1 of 2). Comparing 8 points to limit.

Constituent: Boron Analysis Run 4/15/2021 4:44 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Exceeds Limit: HGWC-102, HGWC-103, HGWC-105, HGWC-117, HGWC-118

Prediction Limit
Interwell Non-parametric

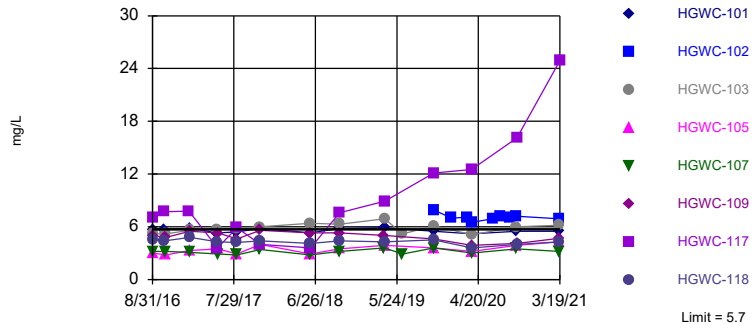


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 49 background values. Annual per-constituent alpha = 0.0123. Individual comparison alpha = 0.0007731 (1 of 2). Comparing 8 points to limit.

Constituent: Calcium Analysis Run 4/15/2021 4:44 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Exceeds Limit: HGWC-102, HGWC-103, HGWC-117

Prediction Limit
Interwell Non-parametric

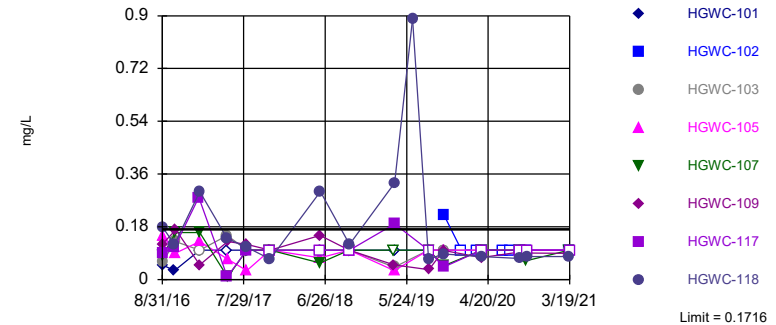


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 49 background values. Annual per-constituent alpha = 0.0123. Individual comparison alpha = 0.0007731 (1 of 2). Comparing 8 points to limit.

Constituent: Chloride Analysis Run 4/15/2021 4:44 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Within Limit

Prediction Limit
Interwell Parametric

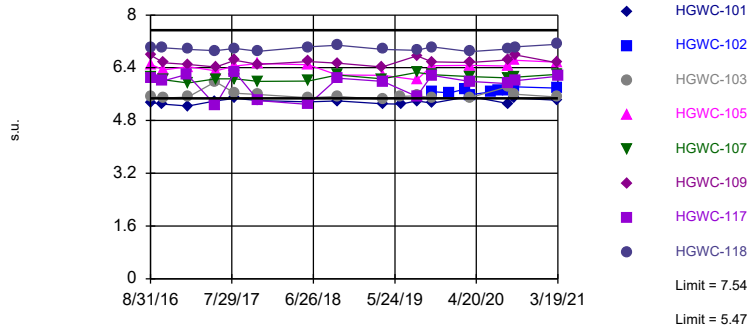


Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.07748, Std. Dev.=0.04777, n=55, 23.64% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9518, critical = 0.94. Kappa = 1.97 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 8 points to limit.

Constituent: Fluoride Analysis Run 4/15/2021 4:44 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Exceeds Limits: HGWC-101

Prediction Limit
Interwell Non-parametric

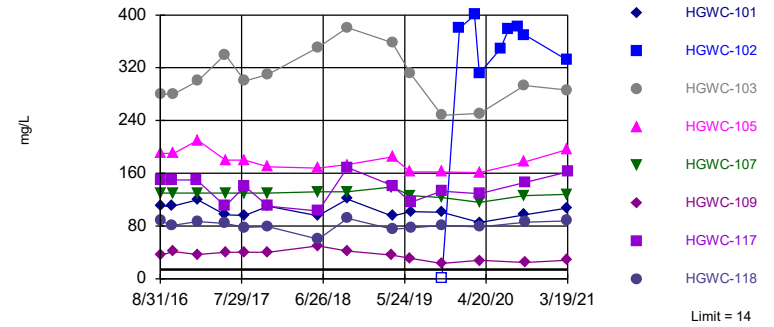


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 55 background values. Annual per-constituent alpha = 0.01997. Individual comparison alpha = 0.001254 (1 of 2). Comparing 8 points to limit.

Constituent: pH Analysis Run 4/15/2021 4:44 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Exceeds Limit: HGWC-101, HGWC-102, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Prediction Limit
Interwell Non-parametric

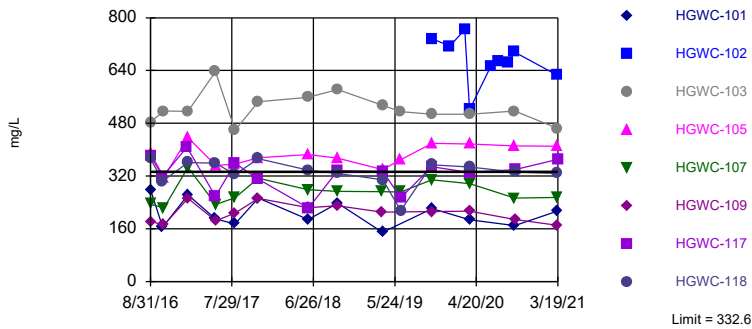


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 49 background values. 4.082% NDs. Annual per-constituent alpha = 0.0123. Individual comparison alpha = 0.0007731 (1 of 2). Comparing 8 points to limit.

Constituent: Sulfate Analysis Run 4/15/2021 4:44 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Exceeds Limit: HGWC-102, HGWC-103, HGWC-105, HGWC-117

Prediction Limit
Interwell Parametric



Background Data Summary (based on natural log transformation): Mean=4.769, Std. Dev.=0.5223, n=48. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9301, 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: Total Dissolved Solids Analysis Run 4/15/2021 4:44 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III

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-117	HGWC-118	HGWC-109
8/30/2016	<0.1	<0.1	<0.1						
8/31/2016				2.22	1.14	0.651	0.821	0.681	0.402
10/20/2016	0.016 (J)						0.956	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							0.99		
1/31/2017				2.12	1.43	0.782		0.768	0.404
5/23/2017		0.0082 (J)	0.0073 (J)	2.56			0.438	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	0.821	0.608	0.397
11/13/2017	0.0103 (J)		0.0089 (J)						
11/14/2017		0.012 (J)		2.32	1.29	0.78	0.536	0.691	0.366
6/4/2018	0.0065 (J)		0.007 (J)						
6/5/2018		0.0085 (J)							
6/6/2018				2.5	1.4	0.87			0.48
6/7/2018							0.5	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			0.85	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)				
4/5/2019							1 (X)	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	1	0.65	0.32
10/23/2019				2.3	1.3				
1/3/2020									
3/4/2020									
3/24/2020	0.011 (J)		0.012 (J)				1		
3/25/2020				2.3	1.4	0.87		0.7	0.36
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			
9/25/2020							1.1		0.28
9/28/2020								0.65	
11/10/2020									
11/11/2020									
12/15/2020									
1/19/2021									
3/11/2021	0.01 (J)								
3/12/2021			0.0061 (J)						
3/16/2021		0.011 (J)							
3/17/2021									0.26
3/18/2021				2.4	1.5	0.92		0.81	
3/19/2021							1.5		

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-101	HGWC-102	HGWA-47 (bg)	HGWA-48D (bg)
8/30/2016				
8/31/2016	0.0724 (J)			
10/20/2016	0.0877 (J)			
10/24/2016				
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	0.0928			
5/23/2017	0.0795			
5/24/2017				
8/10/2017	0.0814			
11/13/2017				
11/14/2017	0.108			
6/4/2018				
6/5/2018				
6/6/2018	0.081			
6/7/2018				
10/1/2018				
10/2/2018				
10/3/2018	0.092			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019	0.06 (X)			
4/5/2019				
6/17/2019				
10/21/2019				
10/22/2019				
10/23/2019	0.1	3.1		
1/3/2020		3.4		
3/4/2020		3.7		
3/24/2020		2.4		
3/25/2020	0.08 (J)			
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	0.1	2.9		
9/25/2020				
9/28/2020				
11/10/2020			0.0064 (J)	
11/11/2020				0.014 (J)
12/15/2020			<0.1	0.0083 (J)
1/19/2021			0.015 (J)	0.015 (J)
3/11/2021				
3/12/2021			0.0067 (J)	0.012 (J)
3/16/2021				
3/17/2021	0.13	2.7		
3/18/2021				
3/19/2021				

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-113 (bg)	HGWA-112 (bg)	HGWC-101	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/30/2016	40.3	6.72	6.69						
8/31/2016				19.4	74.2	44.7	35.1	63.4	79.3
10/20/2016	38.7			19.3				64.4	83.7
10/24/2016		6.4	6.25						
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				19.1	70.3	46.6	34.2		76.8
5/23/2017		7.13	6.4	18.3				32	77.2
5/24/2017	34.8				75.9	49.5	35.3		
8/10/2017	48.6	6.71	6.54	20.9	84	54.2	43.1	78.9	83.1
11/13/2017	17.1		6.26						
11/14/2017		7.4		21.7	87.2	53.2	37.4	46.9	86.7
6/4/2018	30.1		7.4						
6/5/2018		7.4							
6/6/2018				17	81	55	41.1		
6/7/2018								37.7	79.7
10/1/2018	14.2 (J)	6.2	5.8						
10/2/2018					84.7	55.4	42.5		
10/3/2018				19.1 (J)				68	77.1
4/1/2019	58.4								
4/2/2019		7.4	6.7						
4/3/2019						54	37.5		
4/4/2019				16.9	73.8				
4/5/2019								70	82
6/17/2019					81.2	55.3			
6/18/2019								36.3	76.5
10/21/2019	51								
10/22/2019		7.2	6.3			58.1	42.6	70.9	84.2
10/23/2019				21.9	89.4				
1/3/2020									
3/4/2020									
3/24/2020	61.2		7					68	
3/25/2020				18.4	91.4	59.5	42.6		86.8
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				20.3	92.9	55.4			
9/25/2020							48.5	72.8	
9/28/2020									88.9
11/10/2020									
11/11/2020									
12/15/2020									
1/19/2021									
3/11/2021	53.2								
3/12/2021			6.9						
3/16/2021		8.6							
3/17/2021				21.8			37.3		
3/18/2021					97.7	56			85.4

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III
 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	70.4			
10/20/2016				
10/24/2016	70.9			
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	63.6			
5/23/2017	111			
5/24/2017				
8/10/2017	81.2			
11/13/2017				
11/14/2017	79.7			
6/4/2018				
6/5/2018				
6/6/2018	88.3			
6/7/2018				
10/1/2018				
10/2/2018				
10/3/2018	85.3			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019	91.9			
4/5/2019				
6/17/2019	92.6			
6/18/2019				
10/21/2019				
10/22/2019				
10/23/2019	86.5	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			62.2	51.8
9/22/2020				
9/24/2020	91.3	120		
9/25/2020				
9/28/2020				
11/10/2020			73.3	
11/11/2020				61.3
12/15/2020			72.5	61.3
1/19/2021			72.5	58.9
3/11/2021				
3/12/2021			69.2	57.5
3/16/2021				
3/17/2021		111		
3/18/2021	83.7			

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

3/19/2021	HGWC-103	HGWC-102	HGWA-47 (bg)	HGWA-48D (bg)
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Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III

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-117	HGWC-118	HGWC-109
8/30/2016	3.3	2	5.4						
8/31/2016				5.2	3	3.2	7.1	4.5	5
10/20/2016	3.2						7.7	4.4	
10/24/2016		1.9	5.2	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				5.6	3.3	3.1		4.8	5.5
5/23/2017		1.6	5.1	5.7			3.6	4.3	
5/24/2017	3				3.5	2.9			5.3
8/10/2017	2.8	1.7	5.2	5.8	2.9	2.8	5.9	4.2	4.6
11/13/2017	2.5		5.5						
11/14/2017		2		6	4	3.4	4	4.4	5.6
6/4/2018	2.6		5.3						
6/5/2018		1.7							
6/6/2018				6.4	2.9	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				6.3			7.6	4.4	
4/1/2019	4								
4/2/2019		1.8	5.7						
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			
10/21/2019	3.9								
10/22/2019		1.9	5.5			3.6	12.1	4.5	4.6
10/23/2019				6.1	3.6				
1/3/2020									
3/4/2020									
3/24/2020	3.6		5.2				12.5		
3/25/2020				5.1	3.2	3		3.6	3.9
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				6	3.9	3.5			
9/25/2020							16.1		4.1
9/28/2020								4	
11/10/2020									
11/11/2020									
12/15/2020									
1/19/2021									
3/11/2021	3.4								
3/12/2021			5.3						
3/16/2021		1.6							
3/17/2021									4.7
3/18/2021				6.2	4.3	3.2		4.3	
3/19/2021							24.9		

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-101	HGWC-102	HGWA-48D (bg)	HGWA-47 (bg)
8/30/2016				
8/31/2016	5.7			
10/20/2016	5.7			
10/24/2016				
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	5.8			
5/23/2017	5.3			
5/24/2017				
8/10/2017	5.4			
11/13/2017				
11/14/2017	5.8			
6/4/2018				
6/5/2018				
6/6/2018	5.3			
6/7/2018				
10/1/2018				
10/2/2018				
10/3/2018	5.8			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019	5.9			
4/5/2019				
6/17/2019				
10/21/2019				
10/22/2019				
10/23/2019	5.5	7.9		
1/3/2020		7		
3/4/2020		7.1		
3/24/2020		6.5		
3/25/2020	5.2			
4/9/2020				
6/18/2020		6.9		
7/21/2020		7.2		
8/27/2020		7.1		
9/18/2020			2.6	2.7
9/22/2020				
9/24/2020	5.5	7.2		
9/25/2020				
9/28/2020				
11/10/2020				2.7
11/11/2020			2.6	
12/15/2020			2.7	2.9
1/19/2021			2.7	2.8
3/11/2021				
3/12/2021			2.6	2.7
3/16/2021				
3/17/2021	5.5	6.9		
3/18/2021				
3/19/2021				

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III
 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	0.18 (J)			
10/20/2016	0.12 (J)			
10/24/2016				
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	0.3			
5/23/2017	0.14 (J)			
5/24/2017				
8/10/2017	0.11 (J)			
11/13/2017				
11/14/2017	0.07 (J)			
6/4/2018				
6/5/2018				
6/6/2018				
6/7/2018	0.3			
10/1/2018				
10/2/2018				
10/3/2018	0.12 (J)			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019				
4/5/2019	0.33			
6/18/2019	0.89			
8/21/2019				
8/22/2019	0.07 (J)			
8/23/2019				
10/21/2019				
10/22/2019	0.087 (J)			
10/23/2019		0.22 (J)		
1/3/2020		<0.1		
3/4/2020		<0.1		
3/24/2020		<0.1		
3/25/2020	0.078 (J)			
4/9/2020				
6/18/2020		<0.1		
7/21/2020		<0.1		
8/25/2020				
8/26/2020	0.072 (J)			
8/27/2020		<0.1		
9/18/2020			0.067 (J)	0.098 (J)
9/22/2020				
9/24/2020		<0.1		
9/25/2020				
9/28/2020	0.078 (J)			
11/10/2020			0.065 (J)	
11/11/2020				0.083 (J)
12/15/2020			0.064 (J)	0.081 (J)
1/19/2021			0.057 (J)	0.079 (J)
3/11/2021				

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-118	HGWC-102	HGWA-47 (bg)	HGWA-48D (bg)
3/12/2021			0.062 (J)	0.085 (J)
3/16/2021				
3/17/2021		<0.1		
3/18/2021	0.079 (J)			
3/19/2021				

Prediction Limit

Constituent: pH (s.u.) Analysis Run 4/15/2021 4:46 PM View: Appendix III
 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	7.03			
10/20/2016	7.01			
10/24/2016				
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	6.96			
5/23/2017	6.92			
5/24/2017				
8/10/2017	6.99			
11/13/2017				
11/14/2017	6.9			
6/4/2018				
6/5/2018				
6/6/2018				
6/7/2018	7.03			
10/1/2018				
10/2/2018				
10/3/2018	7.08			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019				
4/5/2019	6.96			
6/17/2019				
6/18/2019				
8/21/2019				
8/22/2019	6.93			
8/23/2019				
10/21/2019				
10/22/2019	7.03			
10/23/2019		5.68		
1/3/2020		5.64		
3/4/2020		5.75		
3/24/2020		5.58		
3/25/2020	6.89			
4/9/2020				
6/18/2020		5.67		
7/21/2020		5.72		
8/25/2020				
8/26/2020	6.97			
8/27/2020		5.7		
9/18/2020			7.5	7.54
9/22/2020				
9/24/2020		5.82		
9/25/2020				
9/28/2020	7.03			
11/10/2020				7.34
11/11/2020			7.4	
12/15/2020			7.39	7.27
1/19/2021			7.4	7.32

Prediction Limit

Constituent: pH (s.u.) Analysis Run 4/15/2021 4:46 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWC-118	HGWC-102	HGWA-48D (bg)	HGWA-47 (bg)
3/11/2021				
3/12/2021			7.51	7.52
3/16/2021				
3/17/2021		5.78		
3/18/2021	7.11			
3/19/2021				

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III

Plant Hammond Client: Southern Company Data: Hammond AP-4

	HGWA-111 (bg)	HGWA-113 (bg)	HGWA-112 (bg)	HGWC-101	HGWC-105	HGWC-107	HGWC-109	HGWC-117	HGWC-118
8/30/2016	1.6	14	0.63 (J)						
8/31/2016				110	190	130	36	150	88
10/20/2016	1.6			110				150	81
10/24/2016		11	0.62 (J)						
10/25/2016					190	130	41		
1/25/2017	1.6	12	0.62 (J)						
1/27/2017								150	
1/31/2017				120	210	130	37		87
5/23/2017		12	0.55 (J)	97				110	84
5/24/2017	1.4				180	130	40		
8/10/2017	1.6	11	0.66 (J)	96	180	130	40	140	78
11/13/2017	1.3		0.61 (J)						
11/14/2017		11		110	170	130	40	110	79
6/4/2018	1.4		0.73 (J)						
6/5/2018		9.9							
6/6/2018				95.5	168	132	49.7		
6/7/2018								103	60.1
10/1/2018	1	6.7	0.52 (J)						
10/2/2018					173	132	42.3		
10/3/2018				121				169	91.5
4/1/2019	1.7								
4/2/2019		8.7	0.78 (J)						
4/3/2019						139	36		
4/4/2019				95.1	185				
4/5/2019								141	75.1
6/17/2019					162	126	30.9		
6/18/2019				102				116	77
10/21/2019	1.8								
10/22/2019		6.8	0.6 (J)			123	23.2	133	80.9
10/23/2019				101	162				
1/3/2020									
3/4/2020									
3/24/2020	1.6		<1					129	
3/25/2020				85.5	161	116	27.9		78.4
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				97	177	126			
9/25/2020							24.7	146	
9/28/2020									86
11/10/2020									
11/11/2020									
12/15/2020									
1/19/2021									
3/11/2021	1.5								
3/12/2021			0.52 (J)						
3/16/2021		7.7							
3/17/2021				107			28.3		
3/18/2021					196	128			87.8

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III
 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	280			
10/20/2016				
10/24/2016	280			
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	300			
5/23/2017	340			
5/24/2017				
8/10/2017	300			
11/13/2017				
11/14/2017	310			
6/4/2018				
6/5/2018				
6/6/2018	351			
6/7/2018				
10/1/2018				
10/2/2018				
10/3/2018	381			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019	358			
4/5/2019				
6/17/2019	311			
6/18/2019				
10/21/2019				
10/22/2019				
10/23/2019	248	<1		
1/3/2020		380		
3/4/2020		400		
3/24/2020		311		
3/25/2020	251			
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	293	370		
9/25/2020				
9/28/2020				
11/10/2020			2.3	
11/11/2020				4.5
12/15/2020			2.4	4.2
1/19/2021			2.6	3.9
3/11/2021				
3/12/2021			1.9	4.7
3/16/2021				
3/17/2021		332		
3/18/2021	286			

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

3/19/2021	HGWC-103	HGWC-102	HGWA-47 (bg)	HGWA-48D (bg)
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Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III

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	172	77	76						
8/31/2016				389	278	235	182	381	373
10/20/2016	108				165			319	305
10/24/2016		111	65						
10/25/2016				316		223	172		
1/25/2017	345	155	152 (o)						
1/27/2017								407	
1/31/2017				437	263	346	252		361
5/23/2017		74	52		190			258	359
5/24/2017	126			352		234	184		
8/10/2017	174	94	60	356	175	254	208	359	325
11/13/2017	158		75						
11/14/2017		89		375	253	313	252	310	373
6/4/2018	131		70						
6/5/2018		92							
6/6/2018				385	188	278	224		
6/7/2018								223	338
10/1/2018	101	91	76						
10/2/2018				374		274	230		
10/3/2018					238			337	328
4/1/2019	213								
4/2/2019		94	69						
4/3/2019						273	210		
4/4/2019				340	149				
4/5/2019								334	308
6/17/2019				370		272			
6/18/2019								254	215
10/21/2019	187								
10/22/2019		95	81			308	212	348	354
10/23/2019				419	221				
1/3/2020									
3/4/2020									
3/24/2020	207		52					331	
3/25/2020				417	187	297	213		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	170	253			
9/25/2020							188	340	
9/28/2020									332
11/10/2020									
11/11/2020									
12/15/2020									
1/19/2021									
3/11/2021	207								
3/12/2021			56						
3/16/2021		99							
3/17/2021					213		171		
3/18/2021				410		255			328

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III
 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	483			
10/20/2016				
10/24/2016	517			
10/25/2016				
1/25/2017				
1/27/2017				
1/31/2017	516			
5/23/2017	637			
5/24/2017				
8/10/2017	459			
11/13/2017				
11/14/2017	545			
6/4/2018				
6/5/2018				
6/6/2018	559			
6/7/2018				
10/1/2018				
10/2/2018				
10/3/2018	582			
4/1/2019				
4/2/2019				
4/3/2019				
4/4/2019	535			
4/5/2019				
6/17/2019	515			
6/18/2019				
10/21/2019				
10/22/2019				
10/23/2019	507	736		
1/3/2020		714		
3/4/2020		764		
3/24/2020		521		
3/25/2020	507			
4/9/2020				
6/18/2020		652		
7/21/2020		669		
8/27/2020		663		
9/18/2020			195	224
9/22/2020				
9/24/2020	517	696		
9/25/2020				
9/28/2020				
11/10/2020			229	
11/11/2020				221
12/15/2020			233	239
1/19/2021			199	224
3/11/2021				
3/12/2021			217	204
3/16/2021				
3/17/2021		626		
3/18/2021	465			

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 4/15/2021 4:46 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

3/19/2021	HGWC-103	HGWC-102	HGWA-47 (bg)	HGWA-48D (bg)
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FIGURE E.

Appendix III Trend Test - Prediction Limit Exceedances - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/19/2021, 1:22 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-107	0.04373	64	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-113 (bg)	0.3842	45	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-105	5.165	61	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-113 (bg)	-1.781	-58	-43	Yes	13	0	n/a	n/a	0.01	NP

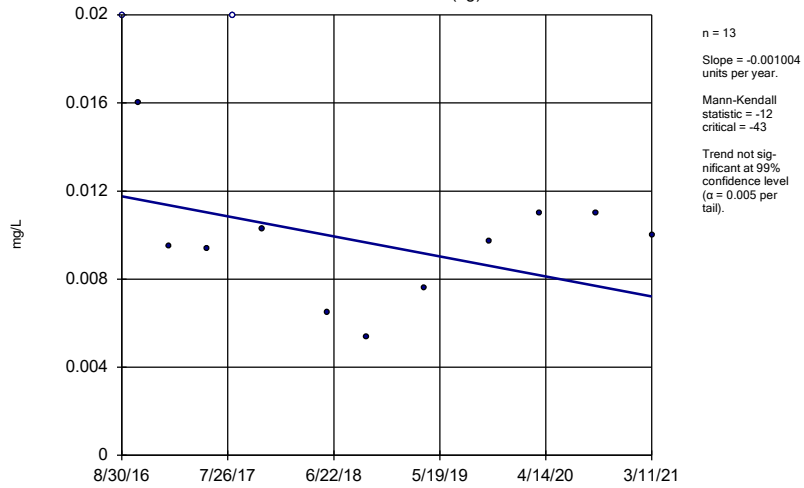
Appendix III Trend Test - Prediction Limit Exceedances - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/19/2021, 1:22 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-111 (bg)	-0.001004	-12	-43	No	13	15.38	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-112 (bg)	-0.00203	-27	-43	No	13	23.08	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-113 (bg)	-0.0003883	-7	-43	No	13	7.692	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-101	0.006042	23	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-102	-0.4388	-14	-25	No	9	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-103	0.02192	13	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-105	0.03697	21	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-107	0.04373	64	48	Yes	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-109	-0.02609	-45	-48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-117	0.09547	42	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-118	-0.005229	-3	-43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-111 (bg)	2.851	14	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-112 (bg)	0.05064	12	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-113 (bg)	0.3842	45	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-102	-17.65	-11	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-103	3.572	33	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-105	5.165	61	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-117	2.328	32	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-118	1.559	31	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-111 (bg)	-0.0137	-1	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-112 (bg)	0.03351	16	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-113 (bg)	-0.08208	-34	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-102	-0.04157	-3	-25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-103	0.1966	29	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-117	2.698	43	43	No	13	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWA-111 (bg)	0.06841	12	53	No	15	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWA-112 (bg)	-0.02033	-23	-53	No	15	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWA-113 (bg)	0.02744	30	53	No	15	0	n/a	n/a	0.01	NP
pH (s.u.)	HGWC-101	0.01391	28	58	No	16	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-111 (bg)	0	-10	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-112 (bg)	-0.02244	-29	-43	No	13	15.38	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-113 (bg)	-1.781	-58	-43	Yes	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-101	-2.874	-25	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-102	12.25	2	25	No	9	11.11	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-103	0	1	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-105	-5.151	-34	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-107	-0.4844	-22	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-109	-2.891	-37	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-117	0	-1	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-118	-0.2732	-7	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-111 (bg)	6.82	13	43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-112 (bg)	-1.162	-8	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-113 (bg)	-0.8749	-1	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-102	-70.01	-12	-25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-103	-3.687	-15	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-105	12.57	21	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-117	-1.931	-1	-48	No	14	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

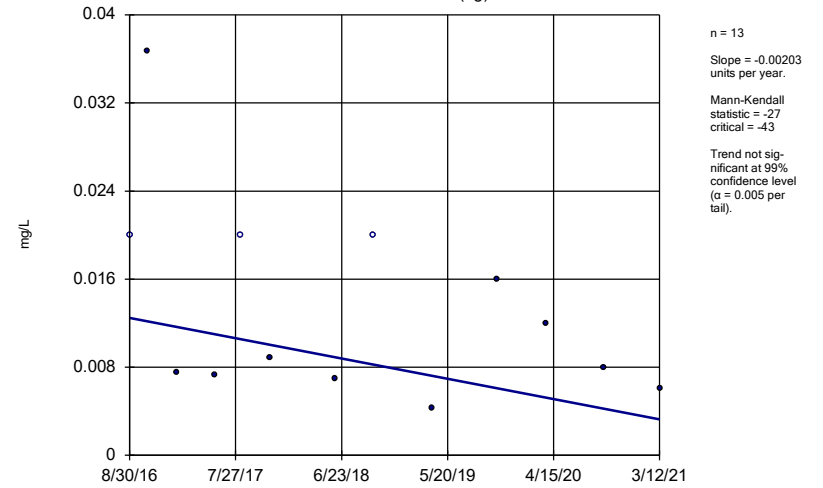
HGWA-111 (bg)



Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

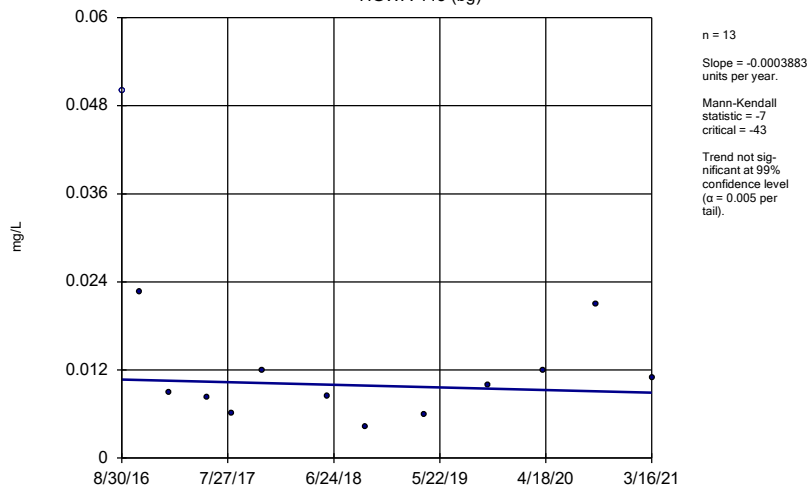
HGWA-112 (bg)



Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

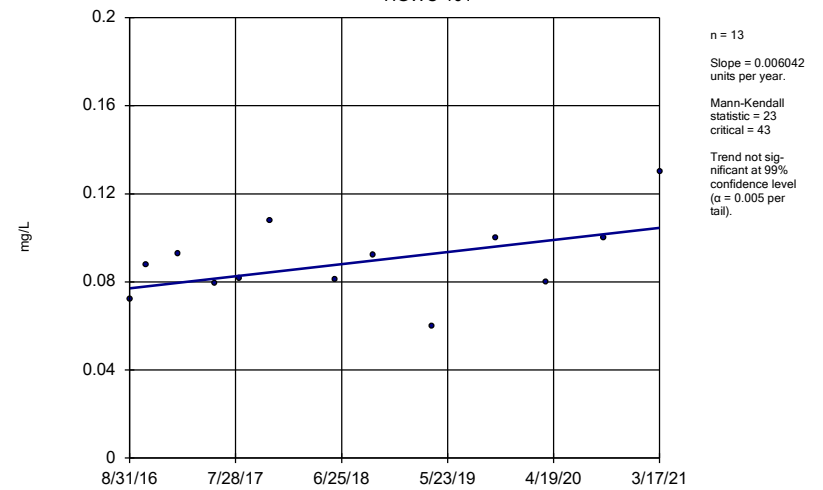
HGWA-113 (bg)



Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

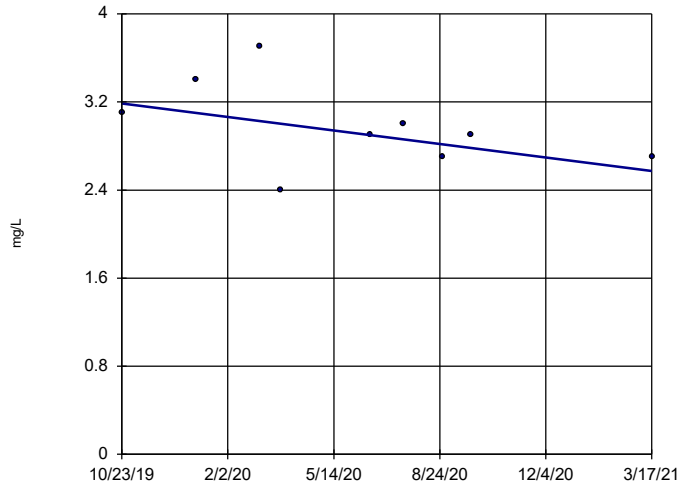
HGWC-101



Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-102

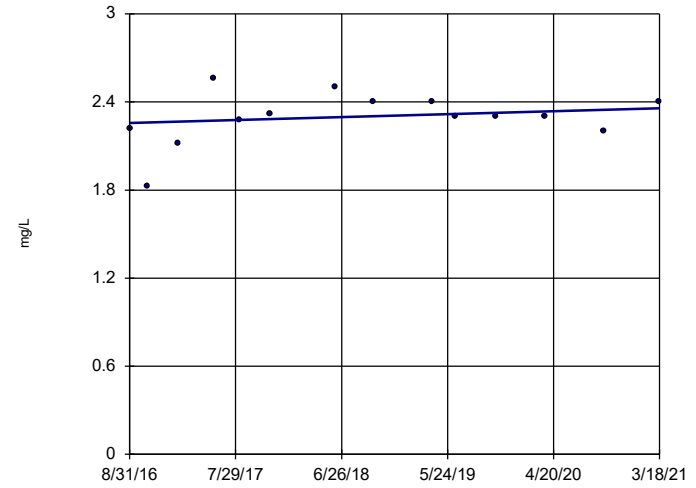


n = 9
 Slope = -0.4388
 units per year.
 Mann-Kendall
 statistic = -14
 critical = -25
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-103

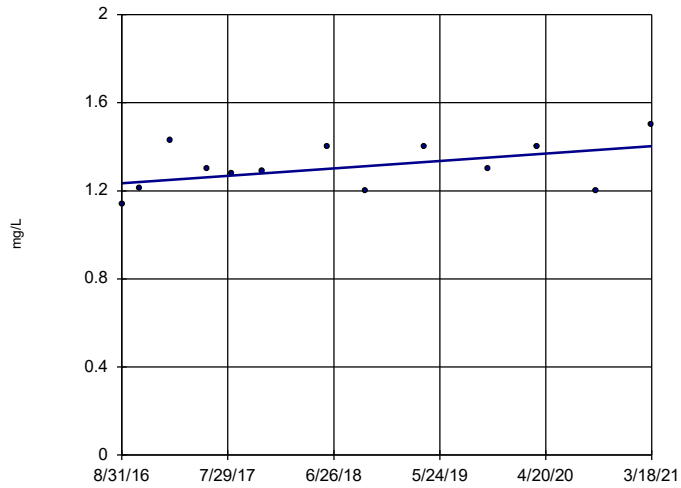


n = 14
 Slope = 0.02192
 units per year.
 Mann-Kendall
 statistic = 13
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-105

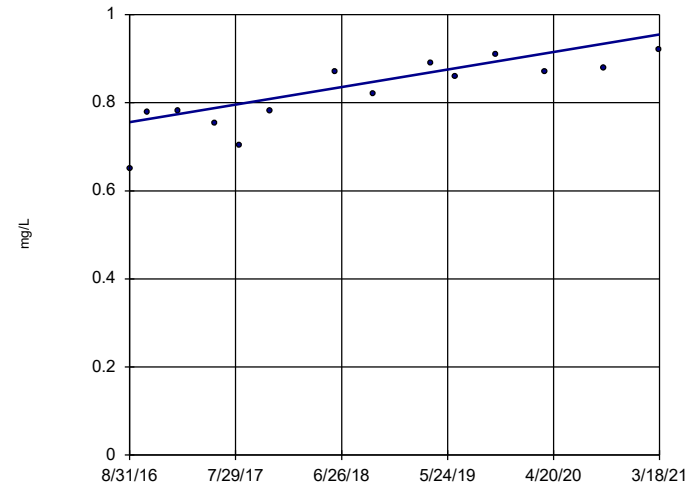


n = 13
 Slope = 0.03697
 units per year.
 Mann-Kendall
 statistic = 21
 critical = 43
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-107

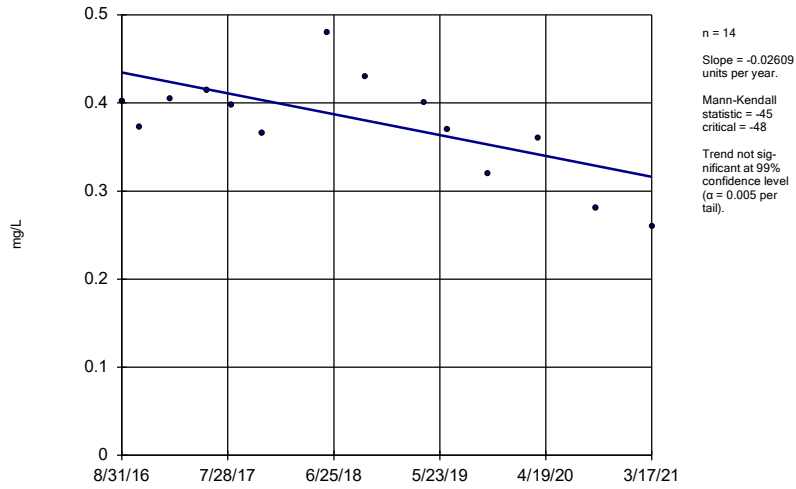


n = 14
 Slope = 0.04373
 units per year.
 Mann-Kendall
 statistic = 64
 critical = 48
 Increasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

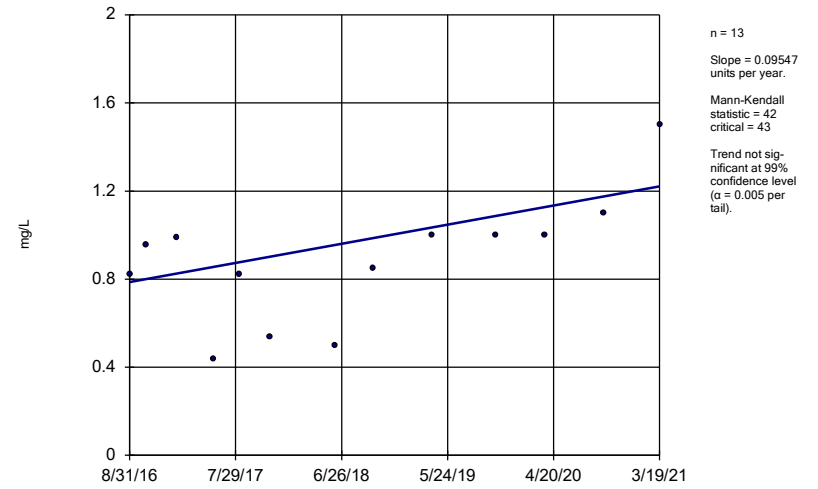
HGWC-109



Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

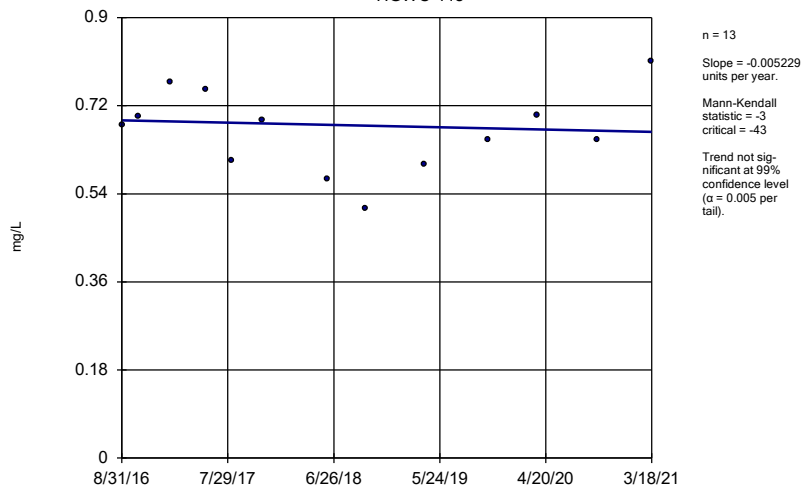
HGWC-117



Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

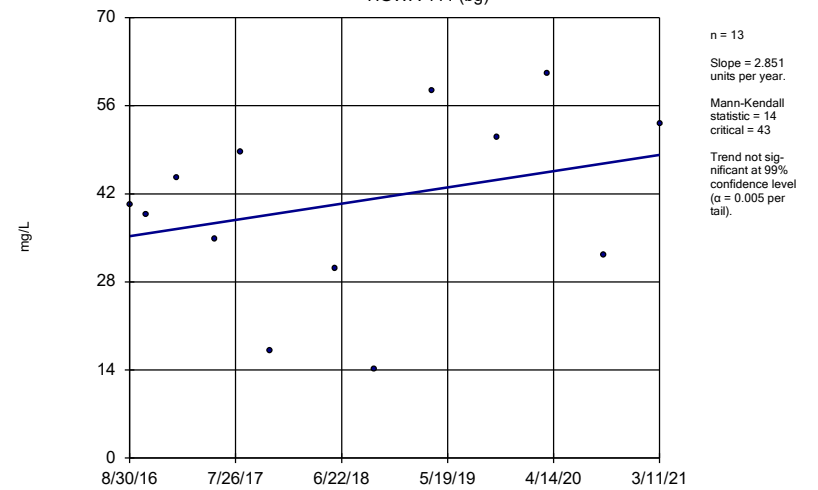
HGWC-118



Constituent: Boron Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

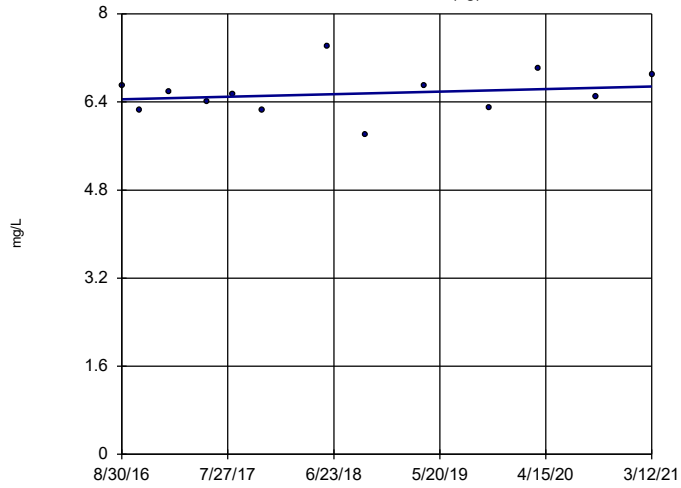
HGWA-111 (bg)



Constituent: Calcium Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-112 (bg)

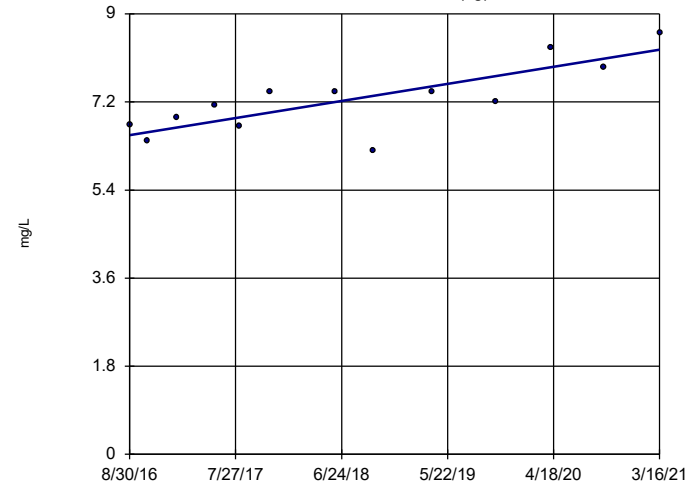


n = 13
 Slope = 0.05064 units per year.
 Mann-Kendall statistic = 12
 critical = 43
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-113 (bg)

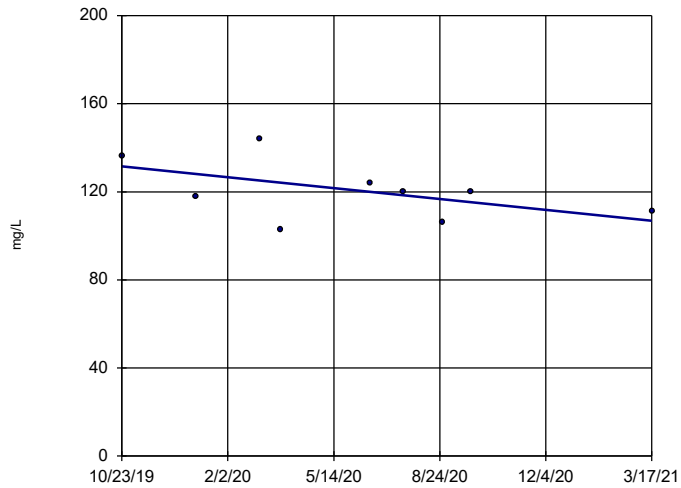


n = 13
 Slope = 0.3842 units per year.
 Mann-Kendall statistic = 45
 critical = 43
 Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-102

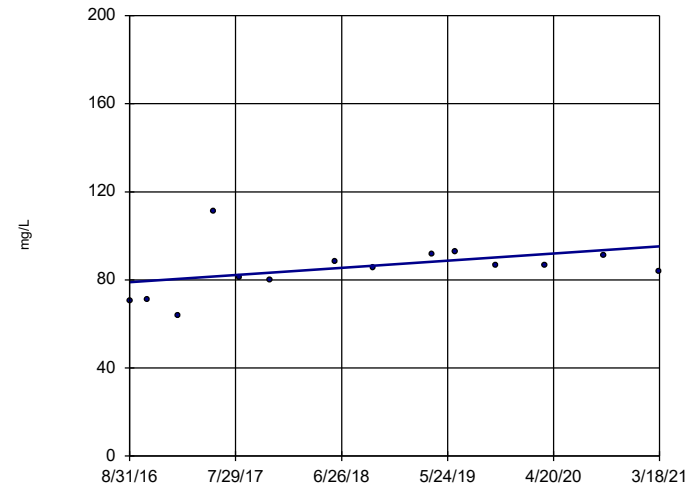


n = 9
 Slope = -17.65 units per year.
 Mann-Kendall statistic = -11
 critical = -25
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-103

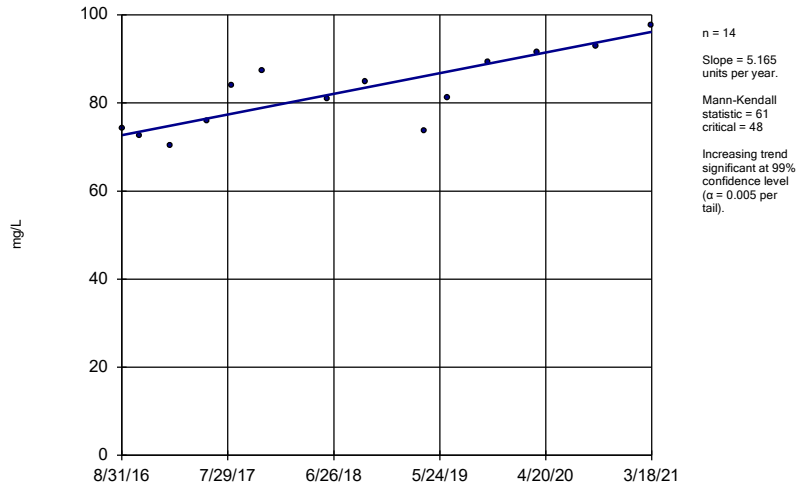


n = 14
 Slope = 3.572 units per year.
 Mann-Kendall statistic = 33
 critical = 48
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

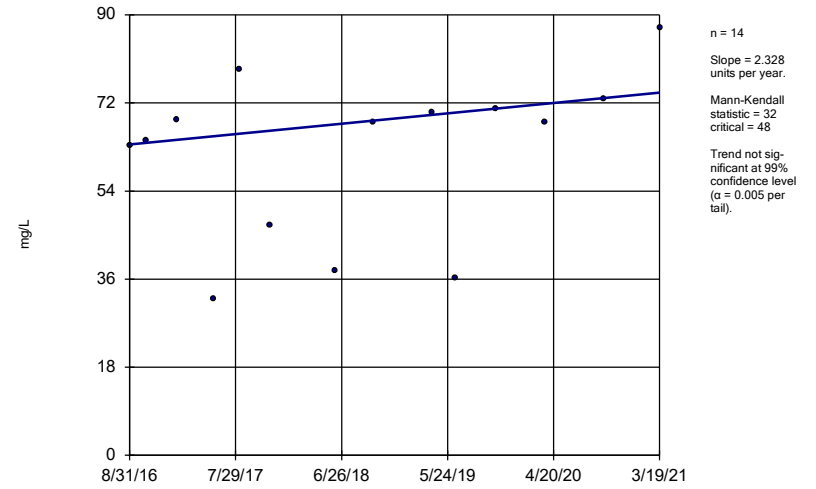
HGWC-105



Constituent: Calcium Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

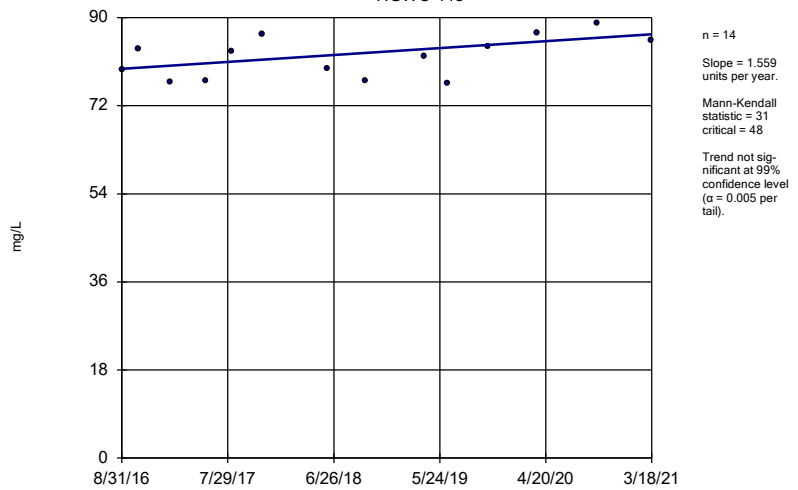
HGWC-117



Constituent: Calcium Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

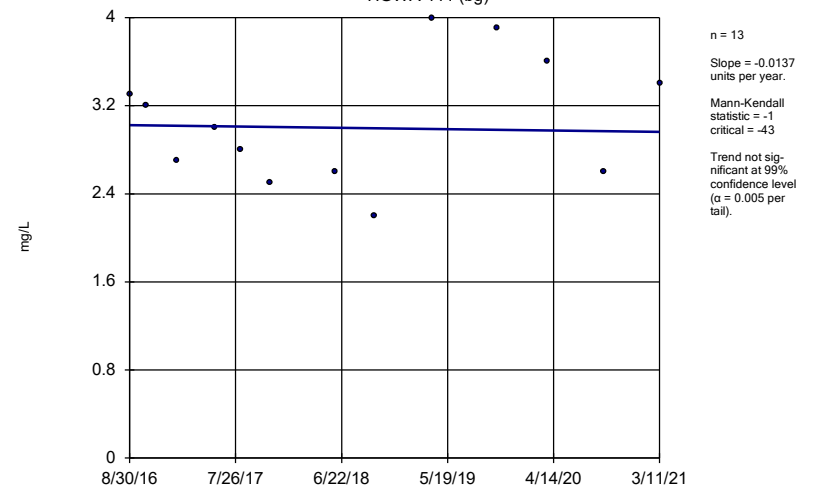
HGWC-118



Constituent: Calcium Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

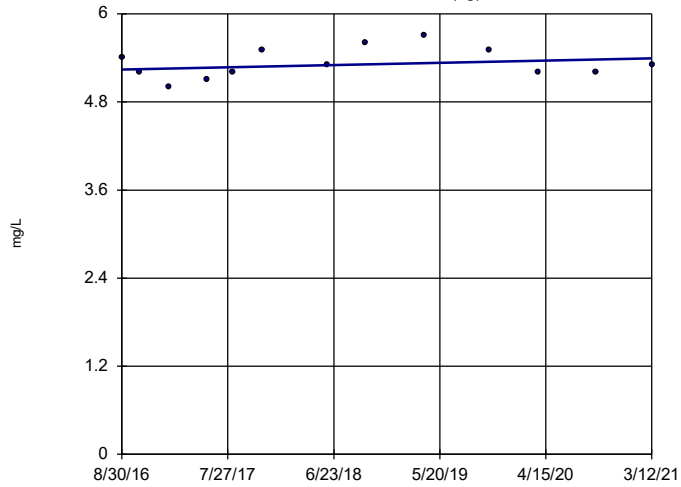
HGWA-111 (bg)



Constituent: Chloride Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-112 (bg)

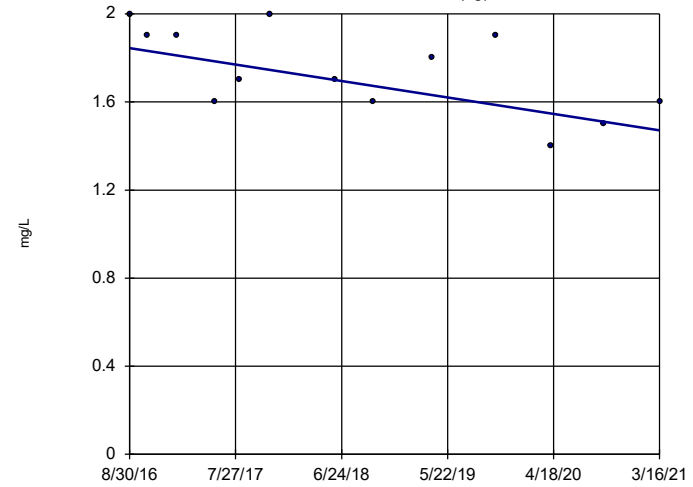


n = 13
 Slope = 0.03351 units per year.
 Mann-Kendall statistic = 16
 critical = 43
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-113 (bg)

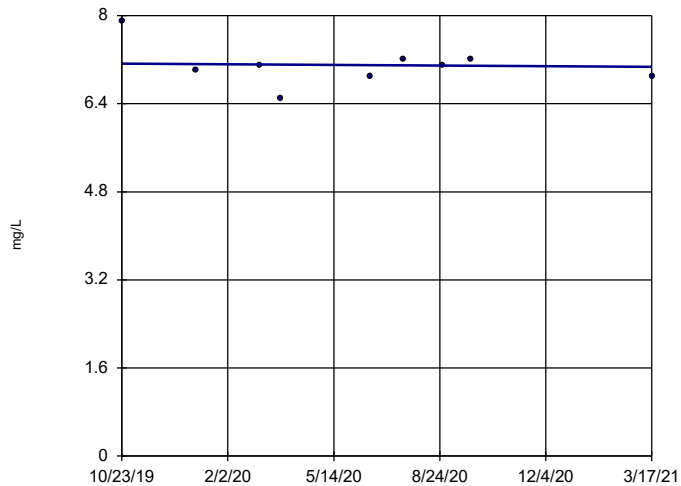


n = 13
 Slope = -0.08208 units per year.
 Mann-Kendall statistic = -34
 critical = -43
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-102

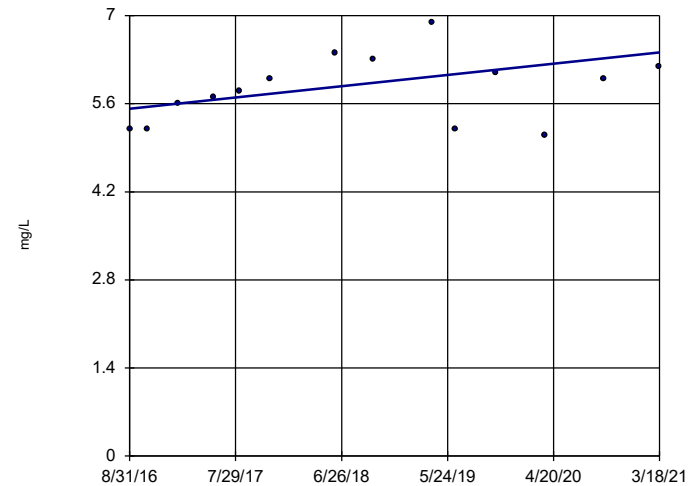


n = 9
 Slope = -0.04157 units per year.
 Mann-Kendall statistic = -3
 critical = -25
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-103

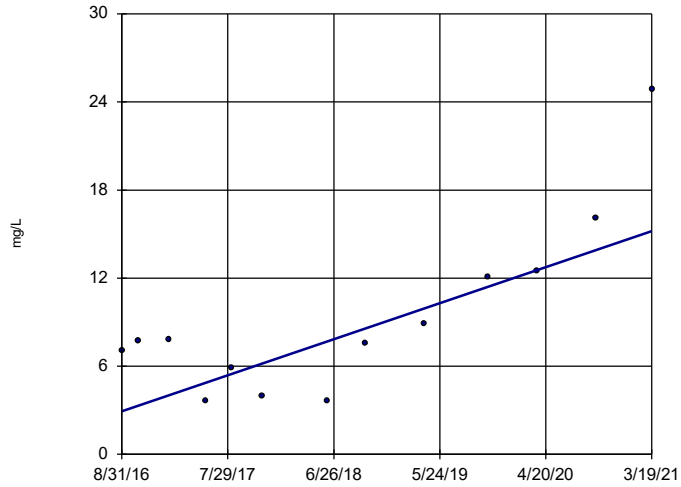


n = 14
 Slope = 0.1966 units per year.
 Mann-Kendall statistic = 29
 critical = 48
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-117

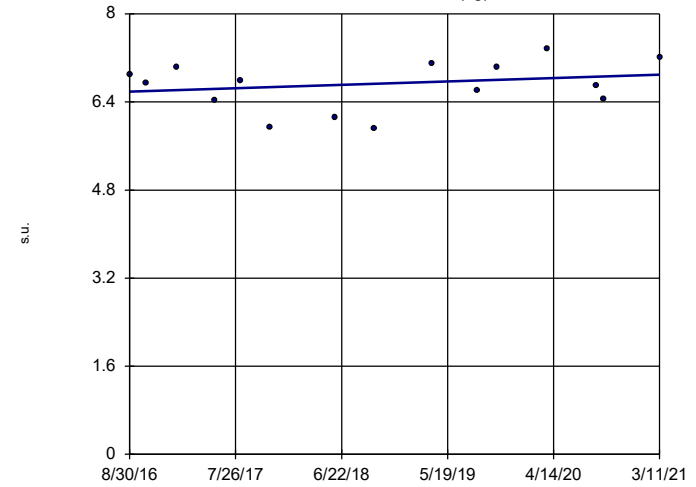


n = 13
 Slope = 2.698
 units per year.
 Mann-Kendall
 statistic = 43
 critical = 43
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-111 (bg)

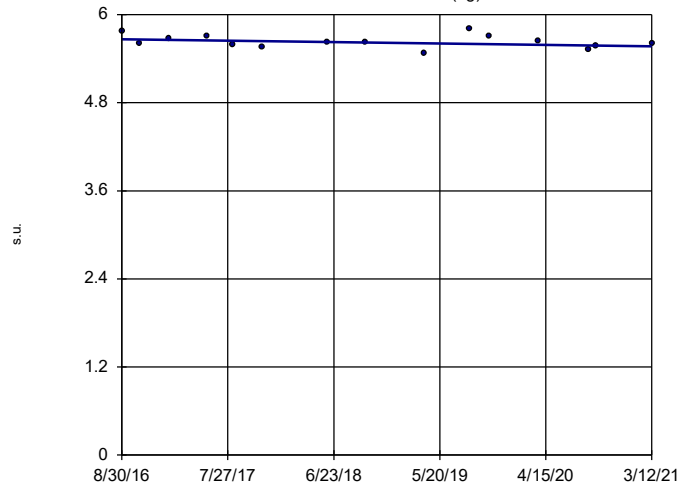


n = 15
 Slope = 0.06841
 units per year.
 Mann-Kendall
 statistic = 12
 critical = 53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: pH Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-112 (bg)

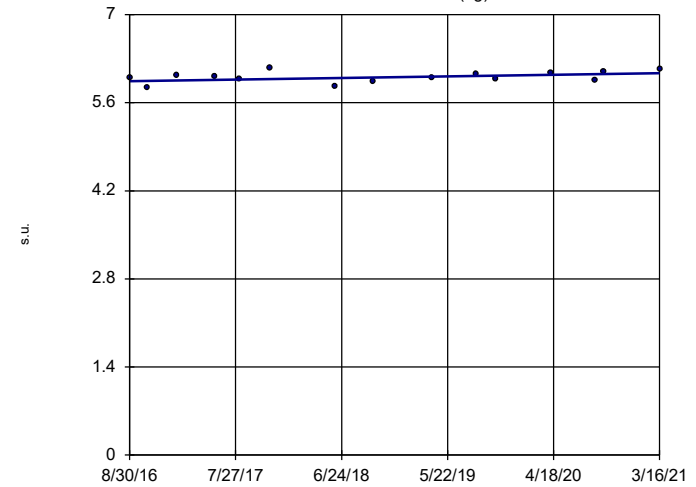


n = 15
 Slope = -0.02033
 units per year.
 Mann-Kendall
 statistic = -23
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: pH Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-113 (bg)

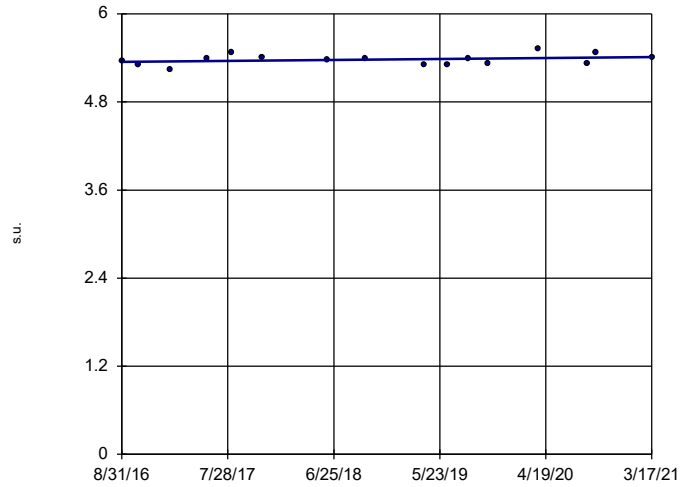


n = 15
 Slope = 0.02744
 units per year.
 Mann-Kendall
 statistic = 30
 critical = 53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: pH Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-101

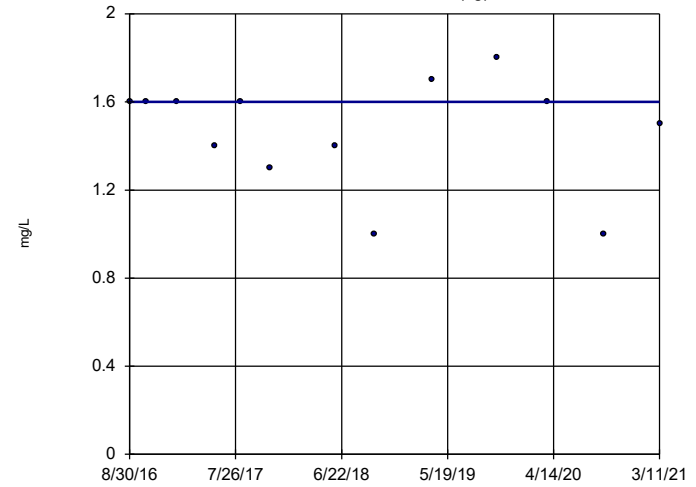


n = 16
 Slope = 0.01391 units per year.
 Mann-Kendall statistic = 28
 critical = 58
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-111 (bg)

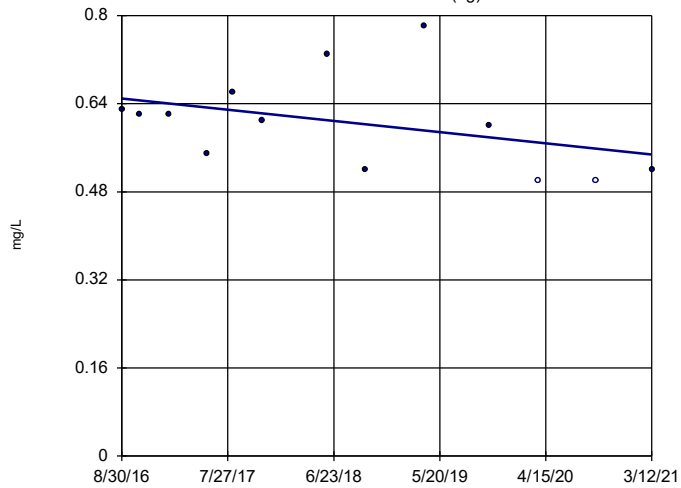


n = 13
 Slope = 0 units per year.
 Mann-Kendall statistic = -10
 critical = -43
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-112 (bg)

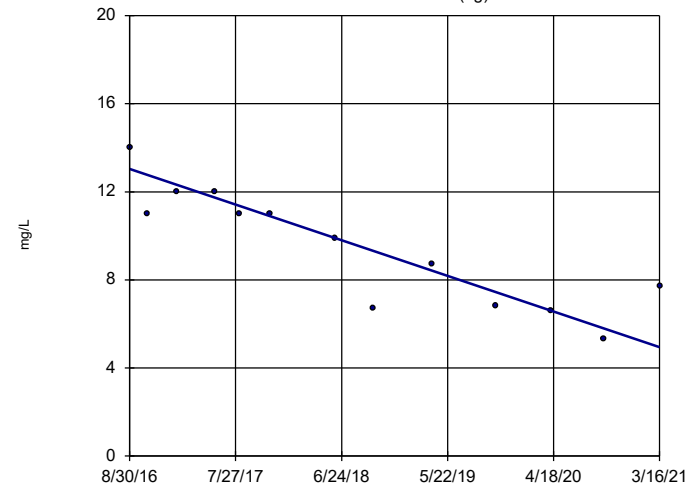


n = 13
 Slope = -0.02244 units per year.
 Mann-Kendall statistic = -29
 critical = -43
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWA-113 (bg)

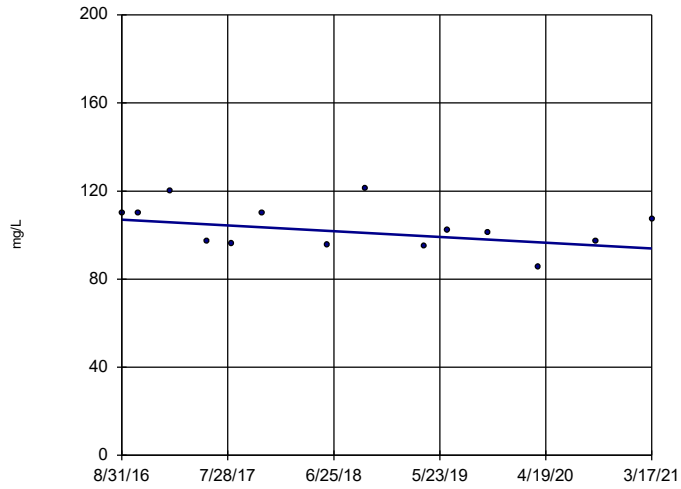


n = 13
 Slope = -1.781 units per year.
 Mann-Kendall statistic = -58
 critical = -43
 Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-101



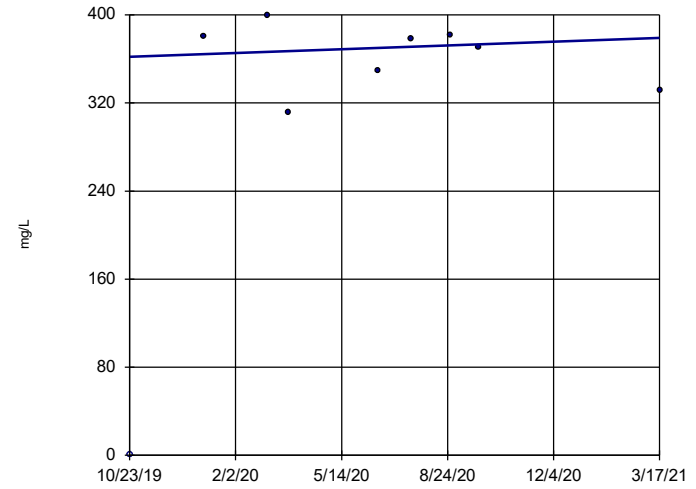
n = 14
 Slope = -2.874 units per year.
 Mann-Kendall statistic = -25
 critical = -48
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWC-102

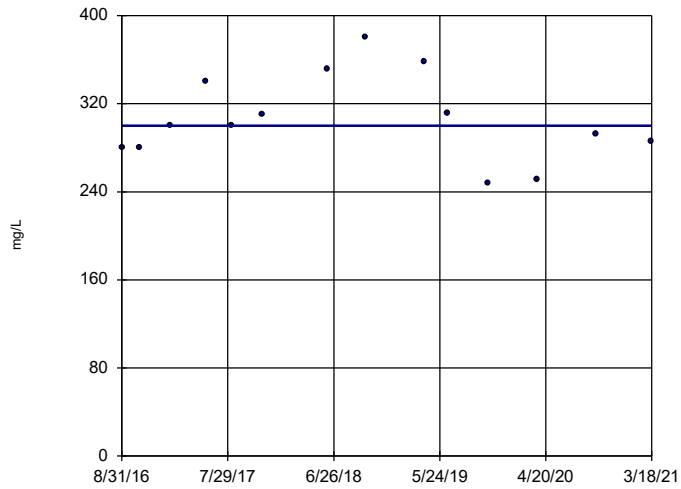


n = 9
 Slope = 12.25 units per year.
 Mann-Kendall statistic = 2
 critical = 25
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-103

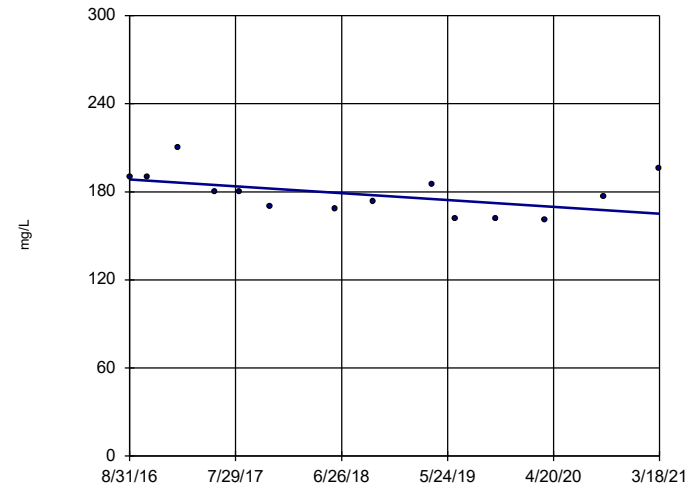


n = 14
 Slope = 0 units per year.
 Mann-Kendall statistic = 1
 critical = 48
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-105

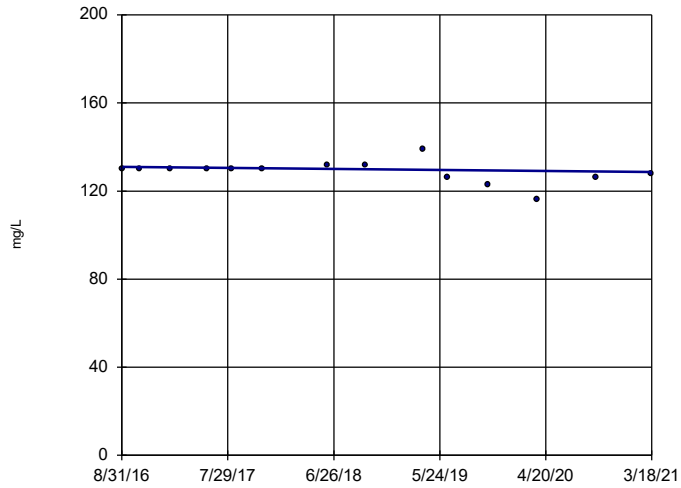


n = 14
 Slope = -5.151 units per year.
 Mann-Kendall statistic = -34
 critical = -48
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-107

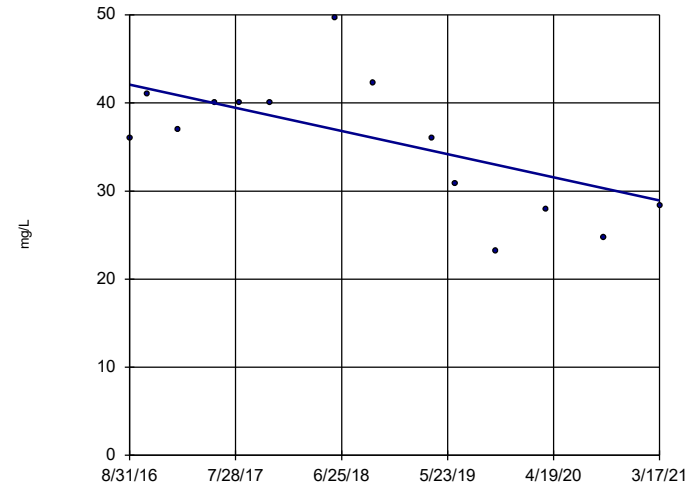


n = 14
 Slope = -0.4844
 units per year.
 Mann-Kendall
 statistic = -22
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Sulfate Analysis Run 4/19/2021 1:20 PM View: Appendix III
 Plant Hammond Client: Southern Company Data: Hammond AP-4

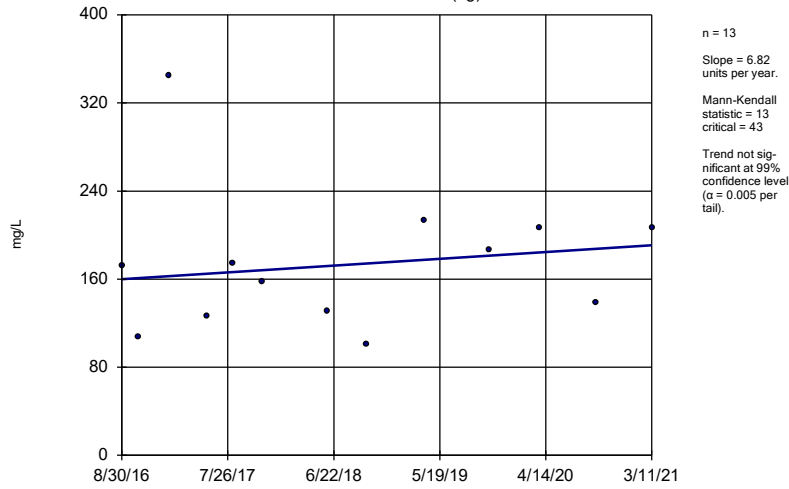
Sen's Slope Estimator

HGWC-109



Sen's Slope Estimator

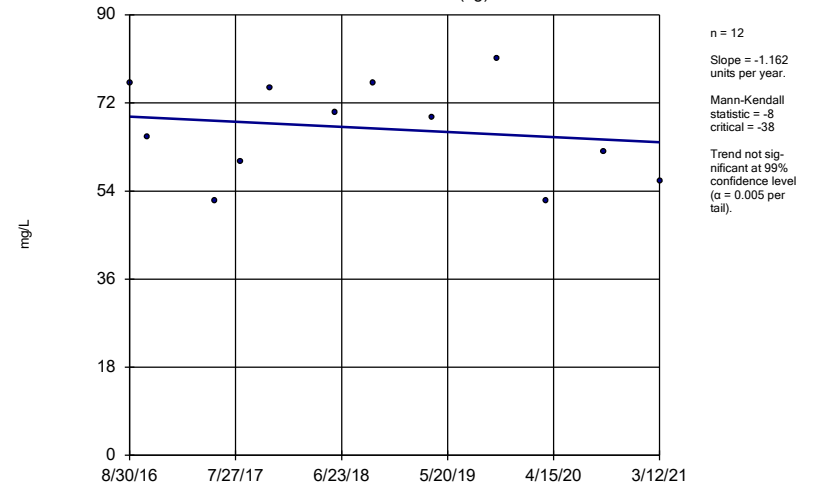
HGWA-111 (bg)



Constituent: Total Dissolved Solids Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

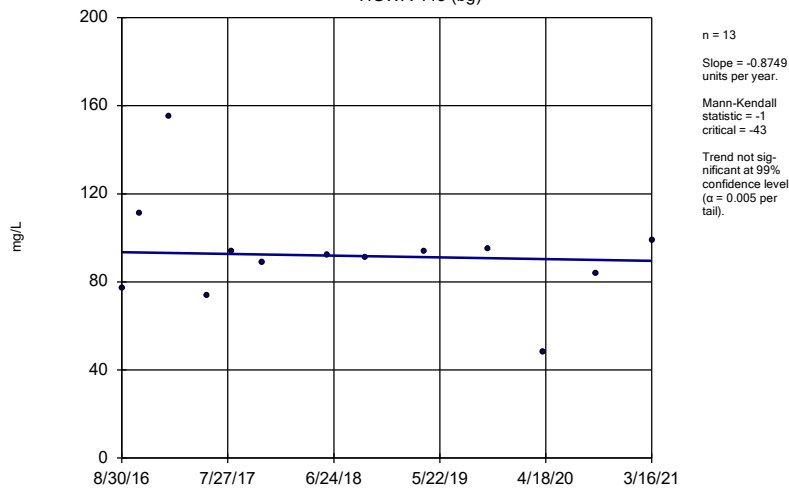
HGWA-112 (bg)



Constituent: Total Dissolved Solids Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

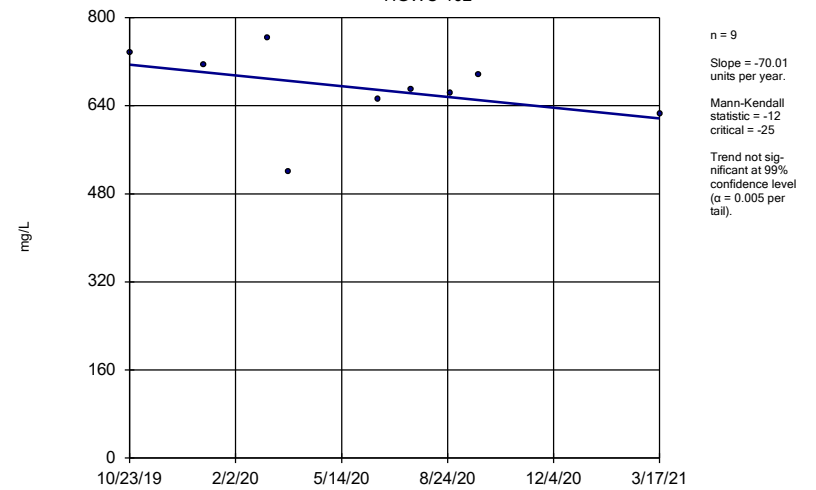
HGWA-113 (bg)



Constituent: Total Dissolved Solids Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

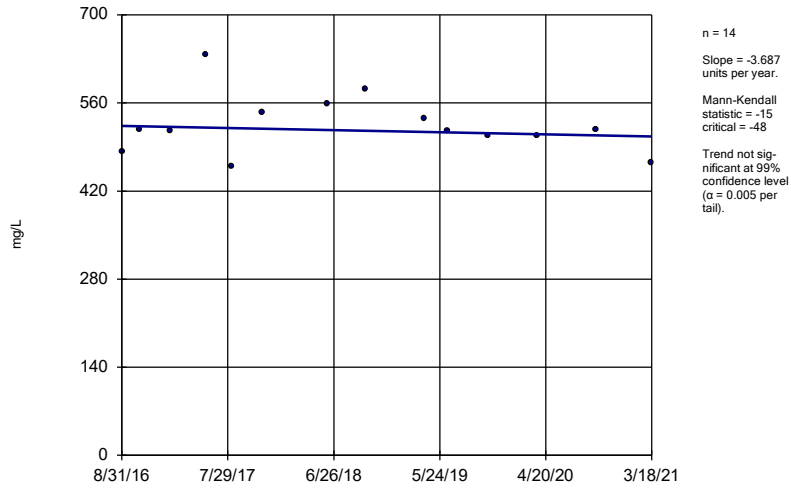
HGWC-102



Constituent: Total Dissolved Solids Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

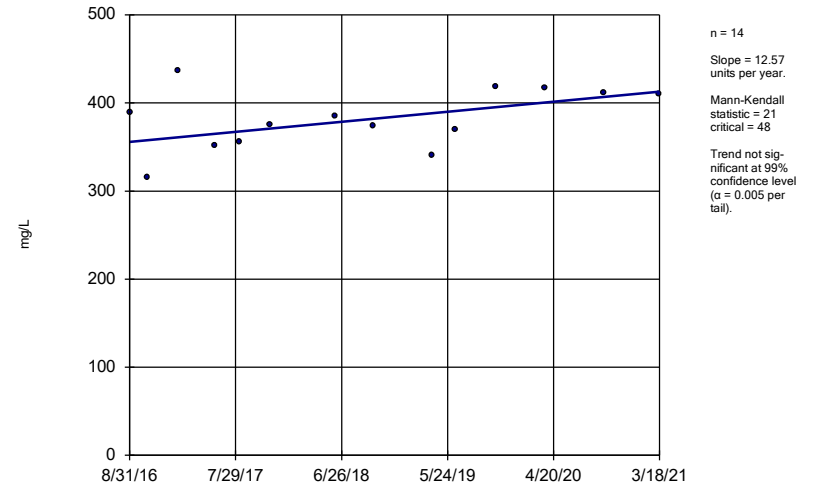
HGWC-103



Constituent: Total Dissolved Solids Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

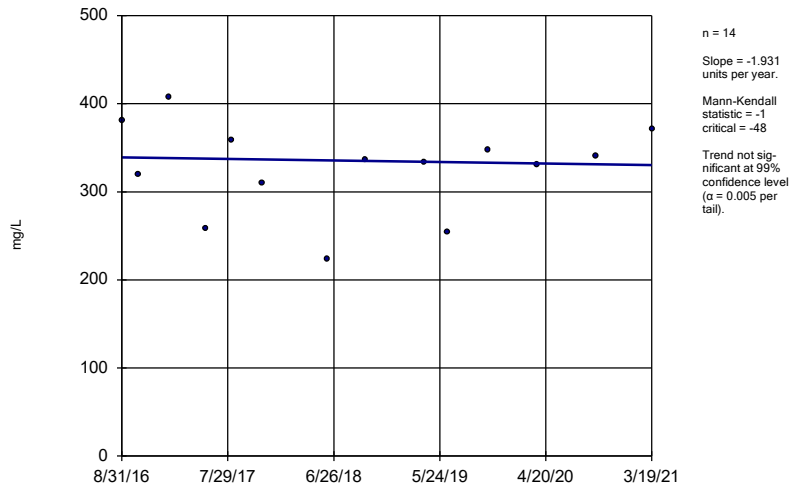
HGWC-105



Constituent: Total Dissolved Solids Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

Sen's Slope Estimator

HGWC-117



Constituent: Total Dissolved Solids Analysis Run 4/19/2021 1:20 PM View: Appendix III
Plant Hammond Client: Southern Company Data: Hammond AP-4

FIGURE F.

Upper Tolerance Limit

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/21/2021, 3:51 PM

<u>Constituent</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	0.003	n/a	n/a	38	n/a	n/a	92.11	n/a	n/a	0.1424	NP Inter(NDs)
Arsenic (mg/L)	0.005	n/a	n/a	52	n/a	n/a	92.31	n/a	n/a	0.06944	NP Inter(NDs)
Barium (mg/L)	0.1	n/a	n/a	52	n/a	n/a	0	n/a	n/a	0.06944	NP Inter(normality)
Beryllium (mg/L)	0.0019	n/a	n/a	52	n/a	n/a	86.54	n/a	n/a	0.06944	NP Inter(NDs)
Cadmium (mg/L)	0.0005	n/a	n/a	52	n/a	n/a	100	n/a	n/a	0.06944	NP Inter(NDs)
Chromium (mg/L)	0.0061	n/a	n/a	52	n/a	n/a	26.92	n/a	n/a	0.06944	NP Inter(normality)
Cobalt (mg/L)	0.005	n/a	n/a	52	n/a	n/a	84.62	n/a	n/a	0.06944	NP Inter(NDs)
Combined Radium 226 & 228 (pCi/L)	1.406	n/a	n/a	52	0.6644	0.3612	0	None	No	0.05	Inter
Fluoride (mg/L)	0.1747	n/a	n/a	55	0.07748	0.04777	23.64	Kaplan-Meier	No	0.05	Inter
Lead (mg/L)	0.0016	n/a	n/a	52	n/a	n/a	59.62	n/a	n/a	0.06944	NP Inter(NDs)
Lithium (mg/L)	0.03	n/a	n/a	52	n/a	n/a	44.23	n/a	n/a	0.06944	NP Inter(normality)
Mercury (mg/L)	0.0005	n/a	n/a	38	n/a	n/a	76.32	n/a	n/a	0.1424	NP Inter(NDs)
Molybdenum (mg/L)	0.01	n/a	n/a	38	n/a	n/a	86.84	n/a	n/a	0.1424	NP Inter(NDs)
Selenium (mg/L)	0.01	n/a	n/a	38	n/a	n/a	78.95	n/a	n/a	0.1424	NP Inter(NDs)
Thallium (mg/L)	0.001	n/a	n/a	38	n/a	n/a	100	n/a	n/a	0.1424	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	0.1	2
Beryllium, Total (mg/L)	0.004	0.0019	0.004
Cadmium, Total (mg/L)	0.005	0.005	0.005
Chromium, Total (mg/L)	0.1	0.0061	0.1
Cobalt, Total (mg/L)		0.005	0.005
Combined Radium, Total (pCi/L)	5	1.41	5
Fluoride, Total (mg/L)	4	0.18	4
Lead, Total (mg/L)		0.0016	0.0016
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.

Confidence Intervals - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/27/2021, 10:27 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Cobalt (mg/L)	HGWC-117	0.009463	0.005094	0.005	Yes	14	0	No	0.01	Param.

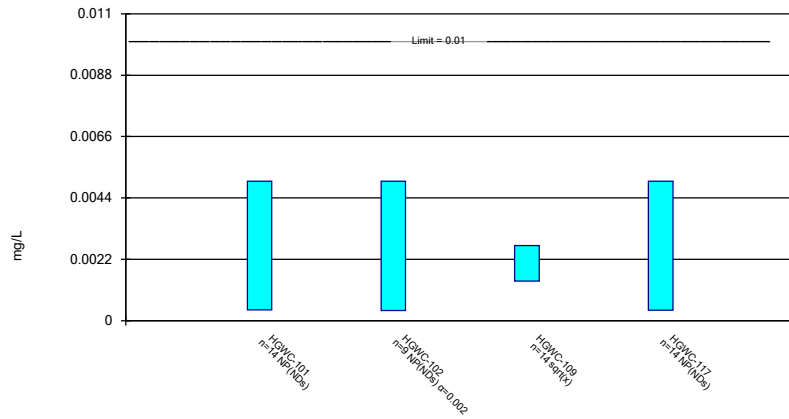
Confidence Intervals - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-4 Printed 4/27/2021, 10:27 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-101	0.005	0.00039	0.01	No	14	92.86	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-102	0.005	0.00036	0.01	No	9	55.56	No	0.002	NP (NDs)
Arsenic (mg/L)	HGWC-109	0.002693	0.001421	0.01	No	14	0	sqrt(x)	0.01	Param.
Arsenic (mg/L)	HGWC-117	0.005	0.00037	0.01	No	14	92.86	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-118	0.005	0.001	0.01	No	14	92.86	No	0.01	NP (NDs)
Barium (mg/L)	HGWC-101	0.04678	0.04071	2	No	14	0	x^(1/3)	0.01	Param.
Barium (mg/L)	HGWC-102	0.03457	0.02654	2	No	9	0	No	0.01	Param.
Barium (mg/L)	HGWC-103	0.04124	0.03526	2	No	14	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-105	0.0745	0.066	2	No	14	0	No	0.01	NP (normality)
Barium (mg/L)	HGWC-107	0.03966	0.0373	2	No	14	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-109	0.08872	0.08207	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-117	0.05161	0.04101	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-118	0.06381	0.05441	2	No	14	0	No	0.01	Param.
Beryllium (mg/L)	HGWC-101	0.003	0.00057	0.004	No	14	50	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-103	0.003	0.00088	0.004	No	14	78.57	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-117	0.003	0.00068	0.004	No	14	64.29	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-118	0.003	0.00093	0.004	No	14	92.86	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-101	0.0002259	0.0001434	0.005	No	14	14.29	No	0.01	Param.
Cadmium (mg/L)	HGWC-102	0.0007433	0.0002211	0.005	No	9	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-103	0.0007911	0.0006603	0.005	No	14	0	No	0.01	Param.
Cadmium (mg/L)	HGWC-107	0.00025	0.00009	0.005	No	14	50	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-117	0.0008213	0.0005758	0.005	No	14	0	No	0.01	Param.
Chromium (mg/L)	HGWC-101	0.005	0.00075	0.1	No	14	71.43	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-102	0.005	0.00051	0.1	No	9	77.78	No	0.002	NP (NDs)
Chromium (mg/L)	HGWC-103	0.005	0.00069	0.1	No	14	57.14	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-105	0.005	0.00064	0.1	No	14	71.43	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-107	0.005	0.00074	0.1	No	14	92.86	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-109	0.005	0.0014	0.1	No	14	85.71	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-117	0.005	0.001	0.1	No	14	71.43	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-118	0.005	0.00098	0.1	No	14	64.29	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-101	0.002817	0.001983	0.005	No	14	7.143	No	0.01	Param.
Cobalt (mg/L)	HGWC-102	0.002337	0.0009837	0.005	No	9	0	ln(x)	0.01	Param.
Cobalt (mg/L)	HGWC-103	0.002335	0.001751	0.005	No	14	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-105	0.0025	0.00045	0.005	No	14	21.43	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-109	0.00223	0.001266	0.005	No	14	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-117	0.009463	0.005094	0.005	Yes	14	0	No	0.01	Param.
Cobalt (mg/L)	HGWC-118	0.0025	0.0004	0.005	No	14	42.86	No	0.01	NP (normality)
Combined Radium 226 & 228 (pCi/L)	HGWC-101	0.9491	0.4125	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-102	1.438	0.4452	5	No	8	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-103	0.9845	0.4412	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-105	0.9531	0.5201	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-107	1.163	0.5015	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-109	0.8475	0.5012	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-117	0.9068	0.4041	5	No	14	0	No	0.01	Param.
Combined Radium 226 & 228 (pCi/L)	HGWC-118	1.243	0.5013	5	No	13	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-101	0.1	0.05	4	No	15	86.67	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-102	0.22	0.1	4	No	9	88.89	No	0.002	NP (NDs)
Fluoride (mg/L)	HGWC-103	0.13	0.06	4	No	15	73.33	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-105	0.13	0.07	4	No	15	53.33	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-107	0.16	0.057	4	No	15	53.33	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-109	0.1233	0.07299	4	No	15	13.33	No	0.01	Param.
Fluoride (mg/L)	HGWC-117	0.11	0.09	4	No	15	53.33	No	0.01	NP (NDs)
Fluoride (mg/L)	HGWC-118	0.3	0.072	4	No	16	0	No	0.01	NP (normality)
Lead (mg/L)	HGWC-101	0.001	0.0009	0.0016	No	14	92.86	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-102	0.001	0.00011	0.0016	No	9	88.89	No	0.002	NP (NDs)
Lead (mg/L)	HGWC-103	0.001	0.00024	0.0016	No	14	64.29	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-105	0.001	0.000068	0.0016	No	14	71.43	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-107	0.001	0.00021	0.0016	No	14	71.43	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-109	0.001	0.000058	0.0016	No	14	85.71	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-117	0.001	0.00019	0.0016	No	14	64.29	No	0.01	NP (NDs)
Lead (mg/L)	HGWC-118	0.001	0.00025	0.0016	No	14	64.29	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-102	0.001295	0.001026	0.03	No	9	0	x^2	0.01	Param.
Lithium (mg/L)	HGWC-103	0.03	0.0015	0.03	No	14	21.43	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-105	0.00419	0.003824	0.03	No	14	0	No	0.01	Param.
Lithium (mg/L)	HGWC-107	0.03	0.00094	0.03	No	14	57.14	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-109	0.03	0.001	0.03	No	14	50	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-117	0.03	0.0012	0.03	No	14	21.43	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-118	0.03	0.0017	0.03	No	14	42.86	No	0.01	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

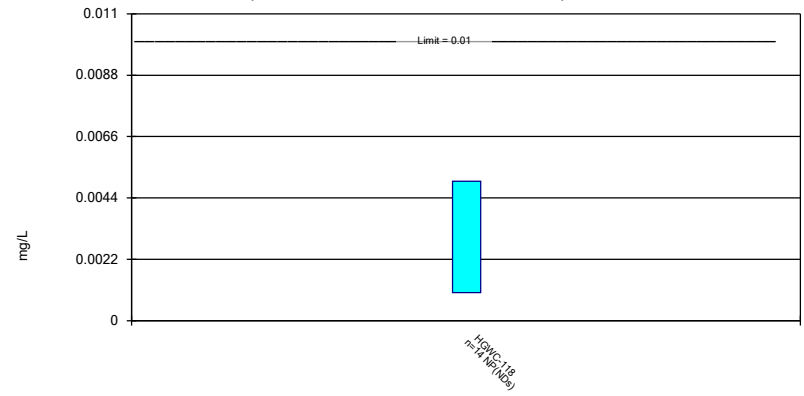
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 4/27/2021 10:25 AM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

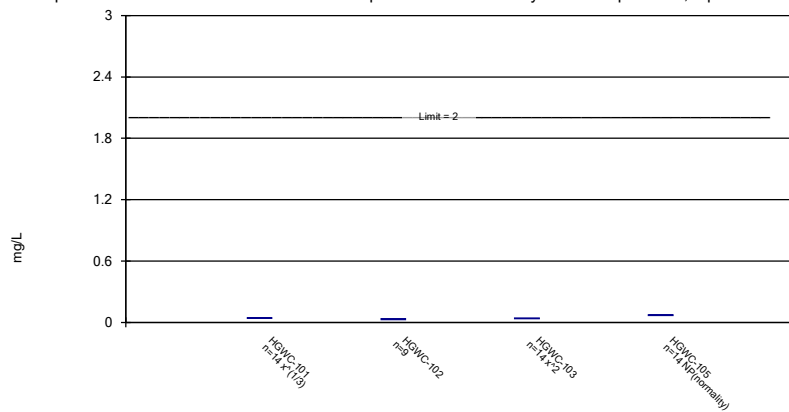
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Constituent: Arsenic Analysis Run 4/27/2021 10:25 AM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

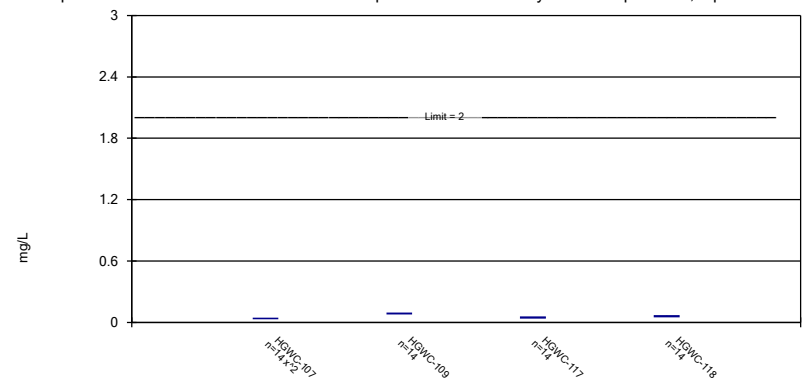
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Constituent: Barium Analysis Run 4/27/2021 10:25 AM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric Confidence Interval

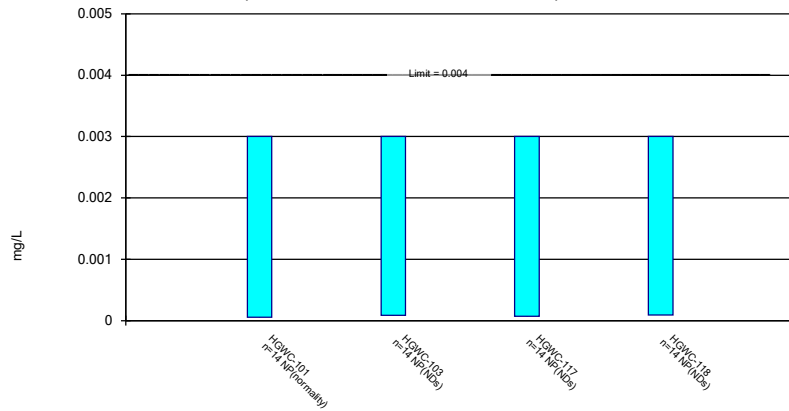
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 4/27/2021 10:25 AM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

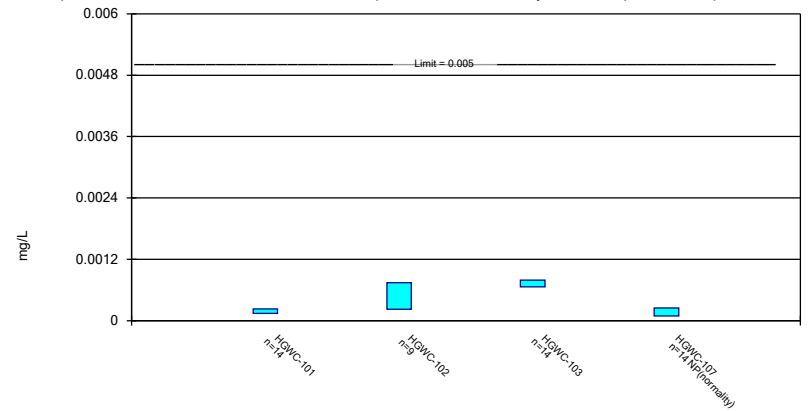
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium Analysis Run 4/27/2021 10:25 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

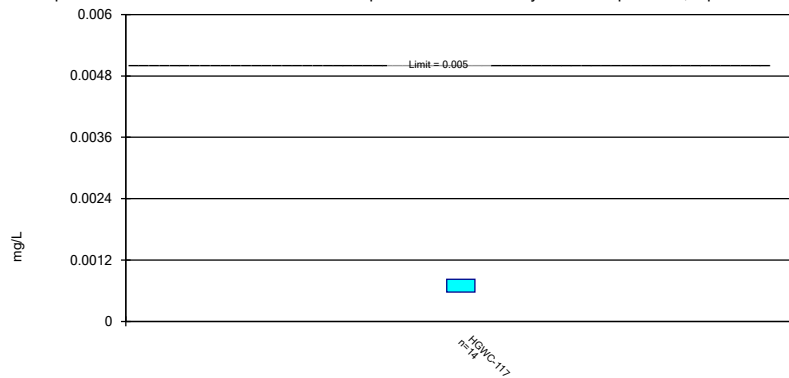
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Constituent: Cadmium Analysis Run 4/27/2021 10:25 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric Confidence Interval

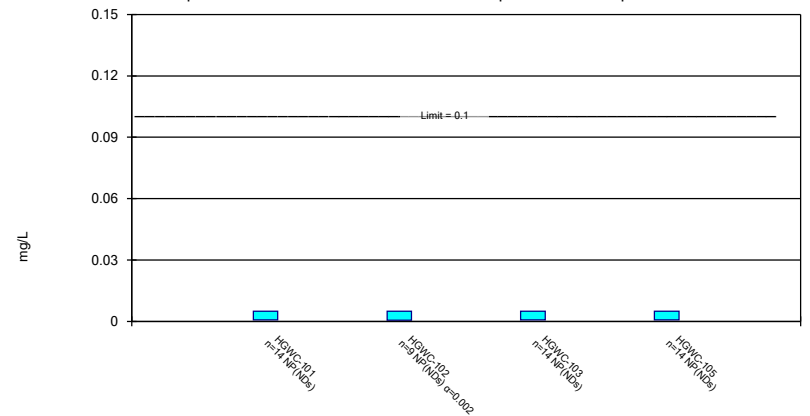
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 4/27/2021 10:25 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

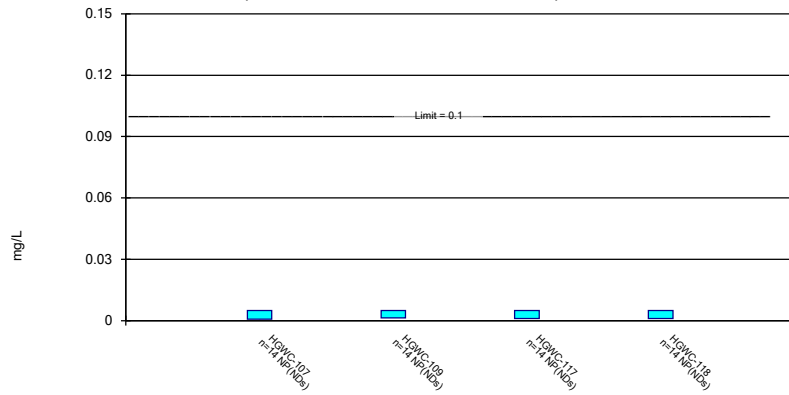
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Chromium Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

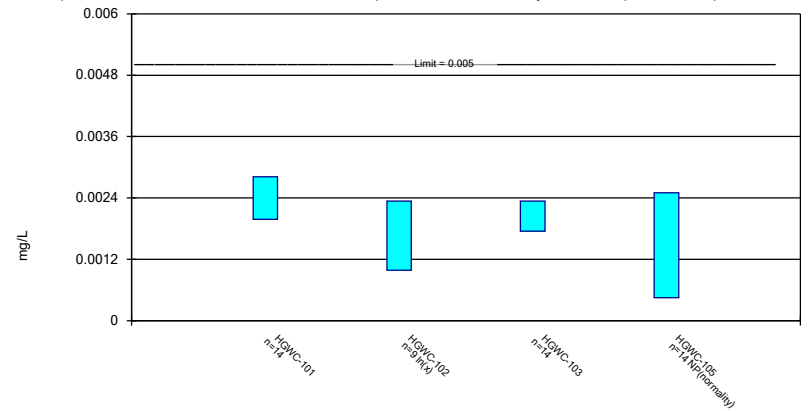
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

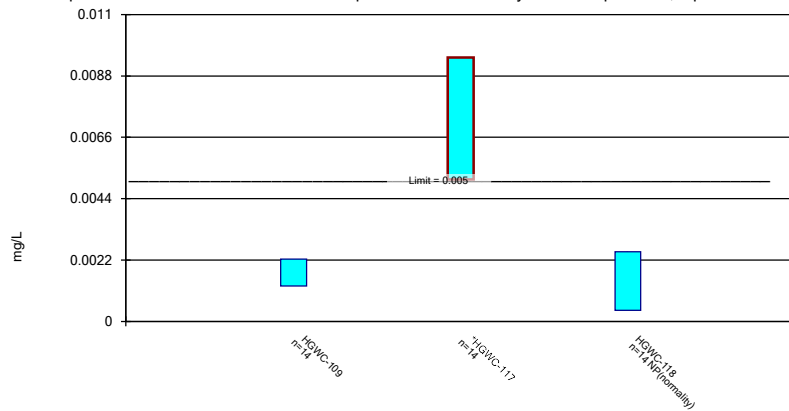
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

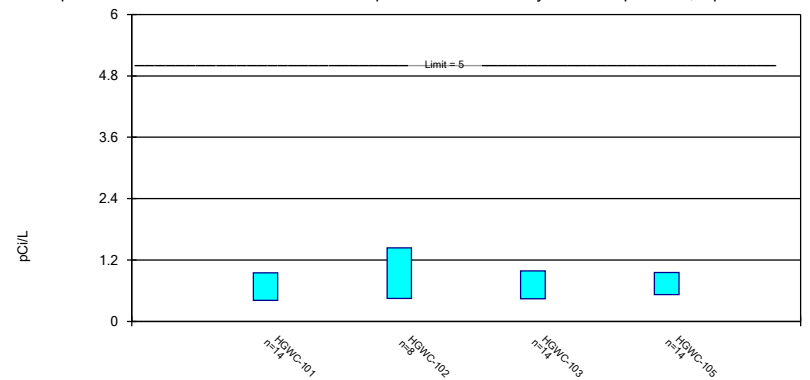
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric Confidence Interval

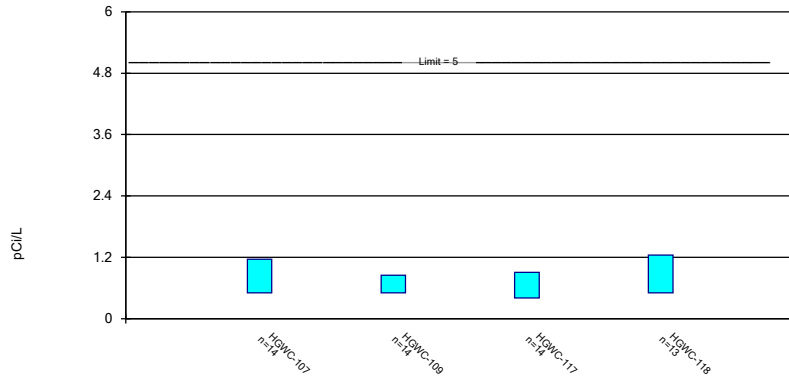
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Constituent: Combined Radium 226 & 228 Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric Confidence Interval

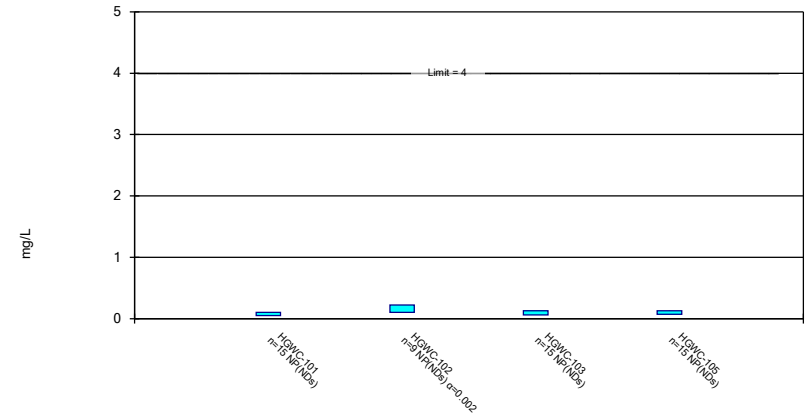
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 & 228 Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

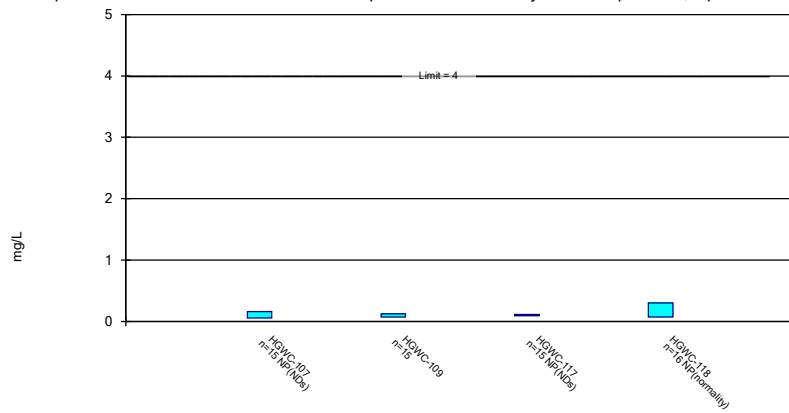
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Fluoride Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

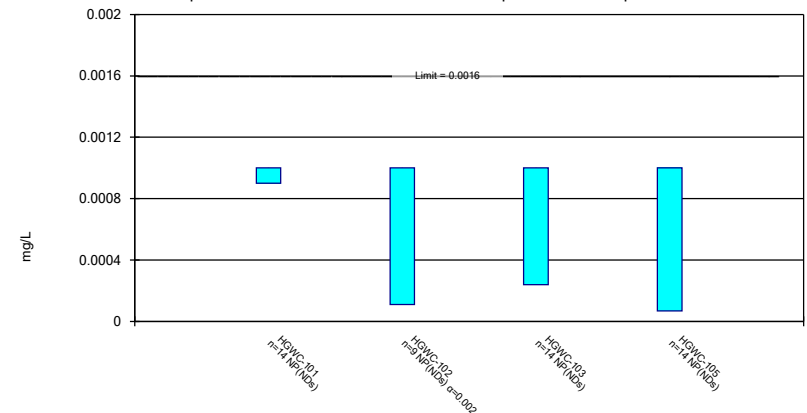
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

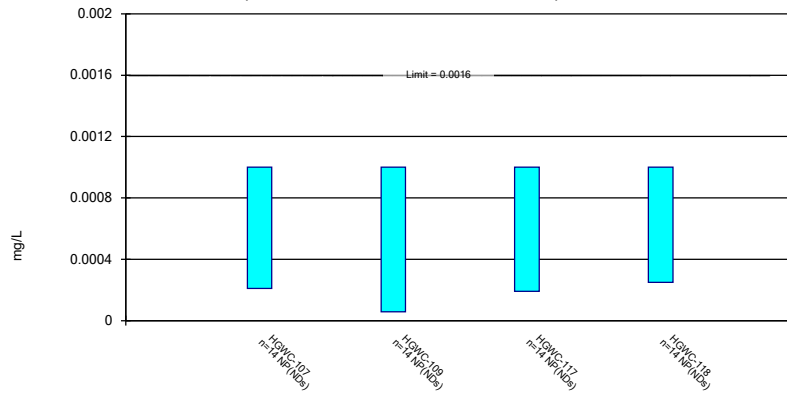
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Lead Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

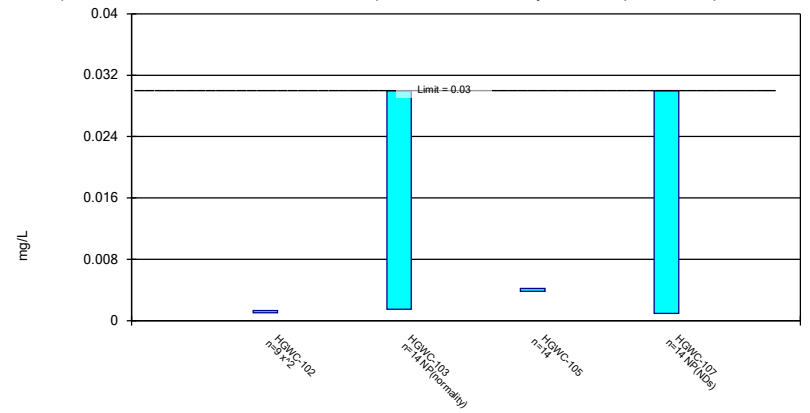
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Parametric and Non-Parametric (NP) Confidence Interval

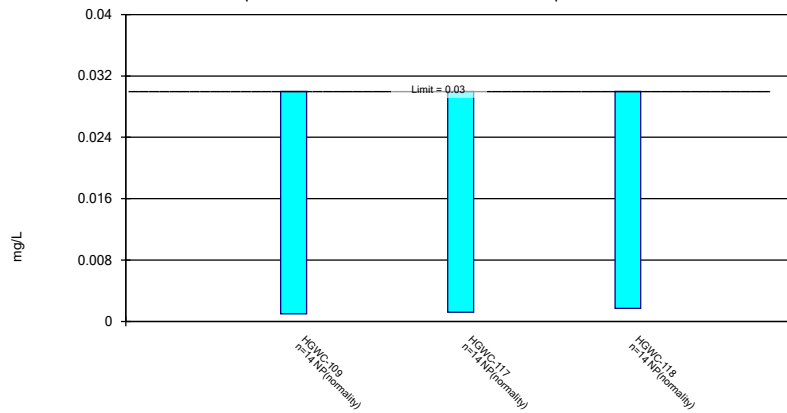
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Constituent: Lithium Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lithium Analysis Run 4/27/2021 10:26 AM View: Appendix III & IV
 Plant Hammond Client: Southern Company Data: Hammond AP-4