



Prepared for

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**2020 ANNUAL GROUNDWATER
MONITORING & CORRECTIVE ACTION
REPORT (REVISION 1)
GEORGIA POWER COMPANY
PLANT HAMMOND ASH POND 2 (AP-2)**

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CERTIFICATION STATEMENT

This 2020 Annual Groundwater Monitoring & Corrective Action Report (Revision 1), Georgia Power Company - Plant Hammond – Ash Pond 2 (AP-2) has been prepared in compliance with the United States Environmental Protection Agency coal combustion residual rule [40 Code of Federal Regulations (CFR) 257 Subpart D], specifically 40 CFR § 257.90(e), and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10 by a qualified groundwater scientist or engineer with Geosyntec Consultants.



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February 12, 2021
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EXECUTIVE SUMMARY

This summary of the *2020 Annual Groundwater Monitoring and Corrective Action Report (Revision 1)* provides the status of groundwater monitoring and corrective action program through December 2020 at Georgia Power Company's (Georgia Power's) Plant Hammond Ash Pond 2 (AP-2) (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. Dewatered ash from AP-2 is excavated and transported to the nearby Huffaker Road facility, a



Figure 1. Plant Hammond and the Site

permitted solid waste disposal location owned and operated by Georgia Power. The Site is located on the southwestern portion of the Plant Hammond property shown on Figure 1. The Georgia Environmental Protection Division (GA EPD) approved Closure permit No. 057-023D(CCR) for AP-1 on June 22, 2020.

Groundwater at the Site is monitored using a monitoring system comprised of nine upgradient and five downgradient wells installed between October 2014 and August 2020 that meet federal and state monitoring requirements. Routine sampling and reporting began after the background groundwater conditions were established between May 2016 and May 2017. Based on groundwater conditions at the Site, an assessment monitoring program and assessment of corrective measures were established in January 2018 and January 2019, respectively. During the 2020 annual reporting period, the Site remained in assessment monitoring as corrective measures are being evaluated.

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

During the 2020 reporting period, Geosyntec conducted three groundwater sampling events, two in March and one in September 2020. Groundwater samples were submitted to Pace Analytical Services, LLC, for analysis. Per the CCR rule, groundwater results for March and September 2020 data were evaluated in accordance with the certified statistical methods. That evaluation showed statistically significant values of Appendix III² and Appendix IV³ parameters in wells provided in the table below.

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

Appendix III Parameter	March 2020	September 2020
Boron	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18
Calcium	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18
Chloride	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18
Fluoride	HGWC-18	None
pH	HGWC-14, HGWC-18	HGWC-14, HGWC-18
Sulfate	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18
Total Dissolved Solids	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18	HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18
Appendix IV Parameter⁴	March 2020	September 2020
Cobalt	<i>Federal and State:</i> HGWC-18	<i>Federal and State:</i> HGWC-18, MW-33
Molybdenum	<i>State only:</i> MW-21D	<i>State only:</i> MW-21D

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 radium 226 + 228

⁴ A state statistically significant level SSL-related constituent is determined by comparing the confidence intervals developed to either the constituent's MCL, if available, or the calculated background interwell prediction limit. A federal SSL-related constituent is determined by comparing the confidence intervals developed to either the constituent's MCL, if available, the USEPA RSL, if no MCL is available, or the calculated background interwell prediction limit.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
1.0 INTRODUCTION	1
1.1 Site Description and Background	1
1.2 Regional Geology & Hydrogeologic Setting.....	2
1.2.1 Regional and Site Geology	2
1.2.2 Hydrogeologic Setting.....	3
1.3 Groundwater Monitoring Well Network	3
2.0 GROUNDWATER MONITORING ACTIVITIES	5
2.1 Monitoring Well Installation and Maintenance.....	5
2.2 Assessment Monitoring	6
2.3 Additional Groundwater and Surface Water Sampling.....	6
3.0 SAMPLING METHODOLOGY & ANALYSES.....	8
3.1 Groundwater Level Measurement	8
3.2 Groundwater Gradient and Flow Velocity	8
3.3 Groundwater Sampling Procedures	9
3.4 Laboratory Analyses.....	10
3.5 Quality Assurance & Quality Control Summary.....	11
4.0 STATISTICAL ANALYSIS	12
4.1 Statistical Methods	12
4.1.1 Appendix III Statistical Methods	12
4.1.2 Appendix IV Statistical Methods	13
4.2 Statistical Analyses Results	14
4.3 Delineation Data	15
5.0 MONITORING PROGRAM STATUS.....	17
5.1 Assessment Monitoring Status	17
5.2 Assessment of Corrective Measures.....	17
6.0 CONCLUSIONS & FUTURE ACTIONS	18
7.0 REFERENCES	20

LIST OF TABLES

Table 1	Monitoring Well Network Summary
Table 2	Groundwater Sampling Event Summary for 2020
Table 3	Summary of Groundwater and Surface Water Elevations
Table 4	Groundwater Gradient and Flow Velocity Calculations for 2020
Table 5	Summary of Groundwater Analytical Data
Table 6	Summary of Background Concentrations and Groundwater Protection Standards

LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Monitoring Well Network and Sampling Location Map
Figure 3	Potentiometric Surface Contour Map – March 2, 2020
Figure 4	Potentiometric Surface Contour Map – March 23, 2020
Figure 5	Potentiometric Surface Contour Map – September 2020

LIST OF APPENDICES

Appendix A	Well Design, Installation, and Development Report – Addendum No 2, Plant Hammond Ash Pond 2 (AP-2), July 2020
Appendix B	Well Design, Installation, and Development Report – Addendum No 3, Plant Hammond Ash Ponds 2 (AP-2), November 2020
Appendix C	Well Inspection Forms
Appendix D	Semiannual Remedy Selection and Design Progress Report
Appendix E	Laboratory Analytical and Field Sampling Reports
Appendix F	Statistical Analysis Packages

LIST OF ACRONYMS

ACM	Assessment of Corrective Measures
AP	ash pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
cm/sec	centimeters per second
DO	dissolved oxygen
ft/day	feet per day
ft/ft	feet per foot
GA EPD	Georgia Environmental Protection Division
Georgia Power	Georgia Power Company
GWPS	Groundwater Protection Standard
HAR	Hydrogeologic Assessment Report
K_h	horizontal hydraulic conductivity
MCL	Maximum Contaminant Level
mg/L	milligram per liter
NELAP	National Environmental Laboratory Accreditation Program
NTU	Nephelometric turbidity units
ORP	oxidation-reduction potential
Pace Analytical	Pace Analytical Services, LLC.
PE	professional engineer
PL	prediction limit
QA/QC	Quality Assurance/Quality Control
SSI	statistically significant increase
SSL	statistically significant level
s.u.	standard unit
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D] and the Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4-.10, Geosyntec Consultants has prepared this *2020 Annual Groundwater Monitoring & Corrective Action Report (Revision 1)* to document groundwater monitoring activities conducted at Georgia Power Company (Georgia Power) Plant Hammond (Site) Ash Pond 2 (AP-2). GA EPD Rules for Solid Waste Management 391-3-4-.10(6)(a) adopt the Federal CCR rule by reference. For ease of reference, the USEPA CCR rules are cited within this report. This report documents groundwater and surface water monitoring activities completed for AP-2 during the 2020 calendar year.

Due to statistically significant levels (SSL) of cobalt identified in compliance wells HGWC-15 and HGWC-18, as noted in the *2018 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2019a), Georgia Power initiated an assessment of corrective measures (ACM) program for AP-2 in January, 2019. Pursuant to § 257.96(b), Georgia Power continues to monitor groundwater associated with AP-2 in accordance with the assessment monitoring program established for the unit in 2018, including annual and semiannual monitoring and reporting pursuant to § 257.90 through § 257.95 of the Federal CCR rule, and GA EPD Rules for Solid Waste Management 391-3-4-.10(6)(a).

1.1 Site Description and Background

Plant Hammond is located in Floyd County, Georgia, approximately 10 miles west of Rome and is bordered by Georgia Highway 20 (GA-20) on the north, the Coosa River on the south, Cabin Creek and industrial land on the east, and sparsely populated, forested, rural and industrial land on the west (**Figure 1**). The physical address of the plant is 5963 Alabama Highway, Rome, Georgia, 30165.

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

AP-2 is a 21-acre surface impoundment. Dewatered ash from AP-2 is excavated and transported to the nearby Huffaker Road facility, a permitted solid waste disposal location owned and operated by Georgia Power. Georgia Power will close AP-2 through removal of the CCR material from the CCR unit. The Closure Plan submitted to GA EPD as part of the closure permit application package describes the closure activities and

requirements in accordance with § 257.102 and corresponding Rule 391-3-4-.10(7)(b). The proposed closure by removal approach provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. Details of the closure approach are provided in the Initial Written Closure Plan and published in 2016 to Georgia Power's website. Closure permit No. 057-024D(CCR) was approved by GA EPD on June 22, 2020

1.2 Regional Geology & Hydrogeologic Setting

The following section summarizes the geologic and hydrogeologic conditions at AP-2 as described in the *Hydrogeologic Assessment Report Revision 01 – AP-2* (HAR Rev 01) submitted to GA EPD in December 2019 under separate cover in support of the AP-2 solid waste handling permit (Geosyntec, 2019c).

1.2.1 Regional and Site Geology

The Site is located in the Valley and Ridge Physiographic Province of northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name. Geologic mapping performed at the Site by Petrologic Solutions, Inc. under the direction of Golder (Golder, 2018) indicates that AP-2 is underlain by the lower units of the Cambrian age Conasauga Formation, consisting of mostly calcareous shale. Based on review of subsurface investigations at AP-2, the bedrock was identified as predominantly calcareous shale and fissile black shale. AP-2 is underlain primarily by 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 angular and sub-rounded chert fragments, and dolomite, sandstone, and shale fragments. Residual or native soils have been derived from the in-place weathering of the shale bedrock. The residuum is generally described as brown to yellow brown firm clayey silt with weathered shale fragments. The partially weathered shale zone occurs as an intermediate weathering stage between the residuum and the unweathered shale bedrock. The weathered material is described as black to dark gray to dark red hard, fissile shale and claystone. The unweathered shale bedrock was not encountered or directly observed in the historical borings advanced at the Site.

However, based on geologic conditions in the region, weathering, fracturing and jointing decreases with depth and the weathered rock material grades into competent bedrock.

1.2.2 Hydrogeologic Setting

The uppermost aquifer at AP-2 is a regional groundwater aquifer that occurs primarily in the residuum and within the weathered and fractured bedrock. Based on observations of residuum soil types and horizontal conductivity values, the movement of groundwater in the soil can be characterized as low-to moderate permeability, porous media flow. The groundwater flow in the shallow underlying bedrock is characterized as fracture flow, and due to the preponderance of shale beneath AP-2, is expected to be very low permeability. The regional groundwater flow direction is expected to be from north to south; however, the local flow direction beneath AP-2 is predominantly east to west with an additional southwesterly component.

1.3 Groundwater Monitoring Well Network

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

The compliance monitoring well network for AP-2 consists of 14 monitoring wells, three of which were installed in August 2020 (HGWA-42D, HGWA-43D, and HGWA-44D). The original well network of 11 compliance monitoring wells was certified by a professional engineer (PE) on October 17, 2017; the certification is maintained in the AP-2 Operating Record.

As part of the assessment monitoring program, four additional groundwater monitoring wells (MW-21D, MW-22, MW-23D, and MW-37D) have been installed since 2018 to characterize groundwater quality and flow conditions downgradient of AP-2. Pursuant to § 257.95(g)(1)(iv), the wells, classified as “delineation wells”, will continue to be sampled concurrently with the compliance monitoring well network.

A network of piezometers has been installed at the Site that are used to gauge water levels to define groundwater flow direction and gradients. There are ten piezometers used to

gauge groundwater levels in vicinity of AP-2 (MW-8, MW-9, MW-12, MW-16, MW-17, MW-18, MW-33, MW-34D, MW-35, and MW-36D). The piezometers may be sampled as needed to support the ACM program.

The locations of the compliance monitoring wells, delineation wells, and piezometers 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 monitoring-related activities performed during January through December 2020 and discusses any change in status of the monitoring program. All groundwater sampling was performed in accordance with § 257.93.

2.1 Monitoring Well Installation and Maintenance

Three piezometers (MW-34D, MW-35, and MW-36D) and one delineation well (MW-37D) were installed in May 2020 to provide additional data to characterize groundwater quality and flow conditions downgradient of AP-2. A well installation report that includes detailed boring and well construction logs for the installation of well MW-37D and piezometers MW-34D, MW-35, and MW-36D is provided in **Appendix A**. The installation report was submitted to GA EPD under separate cover in July 2020 (Geosyntec, 2020b).

Three additional compliance monitoring wells (HGWA-42D, HGWA-43D, and HGWA-44D) 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 B**. The installation report was submitted to GA EPD under separate cover in November 2020 (Geosyntec, 2020d).

The AP-2 well network was resurveyed by GEL Solutions on May 19, 2020; a subsequent survey of the wells installed at the Site after May 2020 was conducted on September 10, 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. Additionally, 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-2 well network. The 'September 2020 Well Installation Addendum' was submitted to GA EPD on September 29, 2020 (Geosyntec, 2020c) and included the survey data certified by a Georgia-licensed surveyor.

The well and piezometer networks are inspected during each groundwater monitoring event using GA EPD-based inspection criteria. Any issues identified with the wells (e.g., clogged weep holes within the outer protective casing, faded well identification signage, rusted locks and/or latches, etc.) are addressed before the following groundwater sampling event. The well inspection forms for 2020 are provided in **Appendix C**.

2.2 Assessment Monitoring

Georgia Power initiated an assessment monitoring program for groundwater at AP-2 in January 2018. Statistical analyses of the 2018 assessment monitoring groundwater data identified SSLs of cobalt in AP-2 compliance wells HGWC-15 and HGWC-18. Pursuant to § 257.96, an ACM was initiated for AP-2 in January 2019. An *Assessment of Corrective Measures Report* was subsequently prepared for AP-2 (Geosyntec, 2019b) and submitted to GA EPD in June 2019 and posted to the CCR compliance website in July 2019. In accordance with § 257.96(b), groundwater continues to be monitored at AP-2 under the assessment monitoring program as the ACM phase is implemented.

The initial annual Appendix IV sampling event was conducted in early March 2020; the semiannual assessment monitoring events were conducted in late March / early April and September 2020. The number of groundwater samples collected for analysis and the dates the samples were collected at AP-2 during the 2020 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 and Surface Water Sampling

Supplemental groundwater sampling events were conducted in January and June 2020 to collect additional data in support of the continued evaluation of corrective measures as presented in the ACM Report. The supplementary data will be used (i) to evaluate attenuation mechanisms and rates and aquifer capacity for attenuation; (ii) conduct geochemical fingerprinting of the groundwater relative to source water; and (iii) establish a set of groundwater quality data for newly installed delineation wells. The scope of these additional efforts and associated results are presented in the *Semiannual Remedy Selection and Design Progress Report* provided in **Appendix D**.

Due to the presence of surface water features immediately downgradient of select wells reporting SSLs, installation of additional wells to horizontally characterize the area is infeasible. For this reason, Georgia Power collected surface water samples in July 2020 and December 2020 from three locations in the unnamed creek west of AP-2 and two

locations in the Coosa River, as shown on **Figure 2**, to horizontally delineate identified SSLs of Appendix IV constituents in groundwater at AP-2. Surface water samples were collected from two additional locations upstream of AP-2 which are not shown on Figure 2 (i.e., H-0.5 and H-2). The laboratory reports associated with the sampling event are provided in **Appendix E**. Georgia Power will continue collecting the surface water samples semiannually.

During this reporting period, additional background samples were collected at HGWA-42D, HGWA-43D, and HGWA-44D 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 September and November 2020 sampling events are provided in **Appendix E**. The laboratory report for the December 2020 groundwater sampling event will be provided with the August 2021 semiannual report.

3.0 SAMPLING METHODOLOGY & ANALYSES

The following section presents a summary of the field sampling procedures that were implemented and the groundwater sampling results that were obtained in connection with the assessment monitoring program conducted at AP-2 during 2020.

3.1 Groundwater Level Measurement

Prior to each sampling event, a synoptic round of depth to groundwater level measurements were recorded from the AP-2 wells and piezometers and used to calculate the corresponding groundwater elevations. The calculated groundwater elevations for the March, March/April, and September 2020 events are presented in **Table 3**. The 2020 survey data was used to calculate the groundwater elevations for all three events.

The groundwater elevation data were used to prepare potentiometric surface maps for the March, March/April, and September 2020 events, which are presented on **Figures 3, 4, and 5**, respectively. Groundwater in the AP-2 area flows under the influence of topography from higher elevations on the northern and eastern side of the Site in a westerly direction with a southwesterly flow component.

3.2 Groundwater Gradient and Flow Velocity

The groundwater hydraulic gradient within the uppermost aquifer beneath AP-2 was calculated using the groundwater elevation data from the March, March/April, and September 2020 events. The hydraulic gradient is commonly calculated between two points along the groundwater flow path perpendicular to groundwater elevation contours. Ideally, this flow path originates and concludes with groundwater elevations reported for two wells, but this may not be feasible and still remain perpendicular to the contours. At the request of GA EPD, the hydraulic gradients in this report were calculated between upgradient and downgradient wells selected to provide the most accurate alignment possible relative to the interpreted groundwater flow path. Hydraulic gradients were calculated across the central portion of AP-2 between piezometer MW-18 and well HGWC-17. The supporting calculations are presented in **Table 4**. The presented hydraulic gradients represent the calculated average of the March, March/April, and September 2020 events. The general trajectory of the flow paths used in the calculations and associated potentiometric contour lines are shown on **Figures 3, 4 and 5**.

The average hydraulic gradient along the westerly flow path lines is 0.009 feet per foot (ft/ft). The calculations are presented on **Table 4**.

The approximate horizontal flow velocities associated with AP-2 were calculated using the following derivative of Darcy's Law:

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

where:

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

$$K_h = \text{Hydraulic Conductivity} \left(\frac{\text{feet}}{\text{day}} \right)$$

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

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

The horizontal hydraulic conductivity (K_h) measurements were calculated by ERM (2018) from slug test data collected in a subset of AP-2 wells and piezometers. Results were broadly grouped based on the lithology in which the wells or piezometers were screened. At AP-2, hydraulic conductivities for wells and piezometers screened in the alluvium, colluvium, and residuum averaged 1.65×10^{-4} centimeters per second (cm/sec) [0.47 feet per day (ft/day)]. An effective porosity value of 0.15 was used to represent average lithologic conditions at AP-2, derived based on review of literature, observed site lithology, and professional judgement. Applying these values and the average hydraulic gradient, the average groundwater flow velocity underneath AP-2 was calculated as 0.028 ft/day. The flow velocity calculations are provided in **Table 4**.

3.3 Groundwater Sampling Procedures

During the reporting period, groundwater samples were collected using low-flow sampling procedures in accordance with § 257.93(a). Twelve of the 15 wells/piezometers were purged and sampled using the installed bladder pump with dedicated tubing during the 2020 assessment monitoring events; MW-21D, MW-23D and MW-33 were sampled using a peristaltic pump equipped with new disposable polyethylene tubing during these two events. During the supplemental sampling event in June 2020, MW-21D, MW-33, MW-35, and MW-36D were sampled using a peristaltic pump, with MW-34D and MW-37D sampled using a QED bladder pump; both sampling pump types were equipped with new disposable polyethylene tubing. During the sampling events in September,

November, and December 2020, HGWA-42D, HGWA-43D and HGWA-44D were sampled using a QED bladder pump; the pump was equipped with new disposable polyethylene tubing. 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 [i.e., pH, conductivity, oxidation-reduction potential (ORP), temperature, and dissolved oxygen (DO)] during well purging to verify stabilization prior to sampling. Turbidity was measured using a LaMotte 2020we portable turbidimeter. Groundwater samples were collected when the following stabilization criteria were met:

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

Following purging, once stabilization was achieved, samples were collected into appropriately preserved laboratory-supplied sample containers. Sample bottles were placed in ice-packed coolers and submitted to Pace Analytical Services, LLC. in Norcross, Georgia following chain-of-custody protocol. The field sampling and equipment calibration forms generated during the monitoring events conducted in March, March/April, and September 2020 are provided in **Appendix E**.

3.4 Laboratory Analyses

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

The groundwater analytical results from the 2020 monitoring events are summarized in **Table 5**. The Pace Analytical laboratory reports associated with the results presented in Table 5 are provided in **Appendix E**.

3.5 Quality Assurance & Quality Control Summary

Quality assurance/quality control (QA/QC) samples were collected during the groundwater monitoring events in accordance with the site's *Groundwater Monitoring Plan* (Geosyntec, 2020a), and included the following: field duplicates, equipment blanks, and field blank samples. QA/QC samples were collected in laboratory-provided bottles and submitted under the same chain of custody as the primary samples for analysis of the same parameters by Pace 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, 2011; USEPA, 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 E**, 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 constituents and completed statistical analyses of the Appendix IV groundwater monitoring data obtained during the March/April and September 2020 assessment monitoring events. The report generated from the analyses is provide in **Appendix F** The March/April and September 2020 data were analyzed by Groundwater Stats Consulting (GSC).

4.1 Statistical Methods

Analytical data from the March/April and September 2020 assessment monitoring events were statistically analyzed in accordance with the PE-certified Statistical Analysis Method Certification (October 2017, revised January 2020). The Sanitas groundwater statistical software was used to perform the statistical analyses. Sanitas is a decision-support software package that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations and guidance as recommended in the USEPA document *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance* (Unified Guidance) (USEPA, 2009).

Appendix III statistical analysis was performed to evaluate if Appendix III constituents have returned to background levels. Appendix IV constituents were evaluated to determine if concentrations statistically exceeded the established state and federal GWPS. Detailed statistical methods used for Appendix III and Appendix IV constituents are discussed in statistical analysis package provided in **Appendix F** 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 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 significant statistical increases (SSIs). An "initial

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

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 well with a minimum of 4 samples. 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 SSLs for Appendix IV constituents.

Due to supplemental (or ACM investigation) sampling, some Appendix IV constituents at a well location have differing number of data. At the time of this report, wells MW-21D, MW-22, MW-23D, and MW-33 met this criterion. The data set for MW-35 and MW-37D is limited to less than four independent datums and therefore not subject to the statistical analyses at this time.

The confidence intervals are compared to both the state and federal GWPS. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its GWPS. If a confidence interval exceeds a GWPS, an SSL exceedance is identified.

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

- (1) The maximum contaminant level (MCL) established under § 141.62 and 141.66.
- (2) Where an MCL has not been established:
 - (i) Cobalt 0.006 mg/L;
 - (ii) Lead 0.015 mg/L;
 - (iii) Lithium 0.040 mg/L; and

(iv) Molybdenum 0.10 mg/L.

- (3) Background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.

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

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

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

4.2 Statistical Analyses Results

Based on review of the full Appendix III statistical analysis discussion presented in **Appendix F**, groundwater conditions have not returned to background and assessment monitoring should continue. Based on the statistical analysis of Appendix IV constituents, the following constituents exceeded the state or federal GWPS during the 2020 assessment monitoring events:

AP-2 (Federal CC Rule):

- Cobalt: HGWC-18, MW-33

AP-2 (GA EPD CCR Rule):

- Cobalt: HGWC-18, MW-33
- Molybdenum: MW-21D

The identified SSL of cobalt in well HGWC-18 in exceedance of the state and federal GWPS is consistent with the 2019 reporting year statistical results. The SSL in MW-33

was first determined after statistical analysis of the September 2020 groundwater data. The SSL of molybdenum in MW-21D in exceedance of the state GPWS was initially identified after statistical analysis of the March/April 2020 data set. A groundwater exceedance notification acknowledging the March/April 2020 SSLs of cobalt and molybdenum was placed in the Operating Record on August 31, 2020, pursuant to § 257.95(g). A similar notification was placed in the Operating Record on January 29, 2021 acknowledging the September 2020 SSLs.

4.3 Delineation Data

The cobalt SSL identified in HGWC-18 is vertically delineated by MW-21D (**Table 5**). Due to the presence of a surface water feature in the downgradient direction of HGWC-18 (refer to **Figure 2**), installation of additional wells to horizontally characterize this area is infeasible. As described in Section 2.3, Georgia Power collected surface water samples in July 2020 and December 2020 from three locations in the unnamed creek west of AP-2 and two locations in the Coosa River, as shown on **Figure 2**, to horizontally delineate cobalt at the Site. Surface water data reported for locations AP2 UP and AP2 MID along the unnamed creek are specifically used to delineate cobalt in HGWC-18. Cobalt was not detected in the three unnamed creek surface water samples. Therefore, based on cobalt data collected to date, no cobalt impacts to surface water have been detected and horizontal delineation is complete. Additionally, no cobalt impacts have been detected in the two Coosa River surface water samples (i.e., H+0.25 and H+0.75).

Regarding the molybdenum SSL identified in MW-21D, the molybdenum concentrations in well MW-21D exhibited a steadily decreasing trend from 0.045 mg/L, reported for the initial sampling of this well in March 2019, to its lowest detection of 0.017 mg/L for the September 2020 semiannual sampling event. Georgia Power proactively installed a deeper well (MW-37D) to vertically delineate the HGWC-18/MW-21D well pair. However, the current Appendix IV data set for MW-37D is limited to less than four independent sampling events which is the required number to construct confidence intervals to statistically evaluate the results with respect to GWPS. Georgia Power will continue to monitor this well until an adequately sized data set is available to complete statistical analyses. Regarding horizontal delineation, no molybdenum impacts to surface water have been detected in either the unnamed creek or the Coosa River, therefore horizontal delineation is complete.

During characterization of groundwater at the Site, an SSL for cobalt was identified in well MW-33 following the September 2020 assessment monitoring event. Data

collection at downgradient well MW-35, is ongoing. However, as a proactive measure, Georgia Power sampled surface water in the Coosa River. As previously stated, cobalt was not detected in the two AP-2 related Coosa River surface water samples collected (i.e., sample locations H+0.25 and H+0.75) in July 2020 and December 2020. Therefore, based on cobalt results collected to date, no cobalt impacts to surface water have been detected and horizontal delineation of MW-33 is complete. MW-35 will continue to be sampled during routine sampling events. Vertical delineation of cobalt to below the GWPS at MW-33 is achieved by MW-34D. Well MW-34D is installed less than 30 feet upgradient of MW-33 and screened approximately 26 feet deeper than MW-33. Cobalt has not been detected above the GWPS in MW-34D and serves to vertically delineate cobalt in MW-33.

5.0 MONITORING PROGRAM STATUS

5.1 Assessment Monitoring Status

Pursuant to § 257.96(b), Georgia Power will continue to monitor the groundwater at AP-2 in accordance with the assessment monitoring program regulations of § 257.95 while ACM efforts are continued to be evaluated. Pursuant to § 257.95(g)(1)(iv), the delineation wells will continue to be sampled as part of the ongoing semiannual assessment groundwater monitoring program.

5.2 Assessment of Corrective Measures

The ACM efforts completed during the reporting period covered by this groundwater monitoring and corrective action report are presented in the *Semiannual Remedy Selection and Design Progress Report* provided in **Appendix D**. The Semiannual Progress Report summarizes:

- (i) the current conceptual site model applicable to evaluating groundwater corrective measures proposed in the ACM Report (Geosyntec, 2019b);
- (ii) the analytical data obtained during supplemental ACM-specific field investigations;
- (iii) the status of evaluating applicable corrective measures; and
- (iv) the planned activities and anticipated schedule for the following semi-annual reporting period.

Georgia Power will include future Semiannual Progress Reports with each groundwater monitoring and corrective action report.

6.0 CONCLUSIONS & FUTURE ACTIONS

This *2020 Annual Groundwater Monitoring & Corrective Action Report* for Plant Hammond AP-2 was prepared to fulfill the requirements of USEPA's CCR Rule and GA EPD Rules for Solid Waste Management 391-3-4-.10. Statistical analysis of the March/April and September 2020 assessment monitoring data for AP-2 confirmed the continued presence of an SSL of cobalt in AP-2 compliance monitoring well HGWC-18. The analysis also identified SSLs of molybdenum and cobalt in wells MW-21D and MW-33, respectively.

The cobalt SSL in HGWC-18 is vertically delineated to below the state and federal GWPS by MW-21D. Georgia Power proactively collected surface water samples in July 2020 and December 2020. Cobalt was not detected in the three unnamed creek and two AP-2 related Coosa River surface water samples collected. Based on cobalt results for data collected to date, no cobalt impacts to surface water have been detected and horizontal characterization is complete. Georgia Power will continue to collect surface water samples on a frequency coinciding with the semiannual groundwater assessment monitoring events.

An SSL of molybdenum was identified during the reporting period in well MW-21D. However, the molybdenum concentrations in groundwater have steadily decreased since the well was initially sampled; the lowest concentration of 0.017 mg/L for this well was recorded in September 2020. Georgia Power proactively installed a deeper well (MW-37D) to vertically delineate the HGWC-18/MW-21D well pair. However, the current Appendix IV data set for MW-37D is limited to less than four independent sampling events which is the required number to construct confidence intervals to statistically evaluate the results with respect to GWPS. Georgia Power will continue to monitor this well until an adequately sized data set is available to complete statistical analyses. Regarding horizontal delineation, no molybdenum impacts to surface water have been detected in either the unnamed creek or the Coosa River, therefore horizontal delineation is complete.

The cobalt SSL in MW-33 is horizontally delineated to below the state and federal GWPS by the lack of cobalt detections reported for the surface water samples collected from the Coosa River downgradient of MW-33. The cobalt SSL is vertically delineated to below the GWPS by MW-34D.

Georgia Power will continue to monitor groundwater in the vicinity of AP-2 under the current assessment monitoring program and adaptively manage the Site as new data become available. Georgia Power will continue efforts to assess corrective measures as presented in the Semiannual Progress Report provided in **Appendix D**. The initial annual Appendix IV sampling event is scheduled to occur in February 2021, with the first semiannual assessment monitoring event tentatively planned for March 2021.

7.0 REFERENCES

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TABLES

Table 1
Monitoring Well Network Summary
Plant Hammond AP-2, 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 (ft)
Compliance Monitoring Well										
HGWA-1	Upgradient	12/3/2014	1550423.32	1940770.00	592.32	595.21	573.12	563.12	32.49	10
HGWA-2	Upgradient	12/2/2015	1549796.87	1939845.15	585.29	587.92	570.29	560.29	27.95	10
HGWA-3	Upgradient	12/2/2015	1549794.41	1939833.39	585.23	587.74	553.23	543.23	44.51	10
HGWA-4	Upgradient	12/3/2014	1549930.45	1939385.45	584.94	587.60	572.24	562.24	25.76	10
HGWA-5	Upgradient	12/10/2015	1548633.33	1937184.17	580.52	583.24	564.92	554.92	28.72	10
HGWA-6	Upgradient	12/11/2015	1548636.35	1937177.73	580.72	583.38	543.72	533.72	49.66	10
HGWA-42D	Upgradient	8/27/2020	1549363.72	1938443.86	583.39	586.17	528.39	518.39	67.91	10
HGWA-43D	Upgradient	8/26/2020	1550422.85	1940753.80	592.08	595.08	544.08	534.08	61.25	10
HGWA-44D	Upgradient	8/25/2020	1550409.13	1940756.18	592.01	594.79	491.76	481.76	113.50	10
HGWC-14	Downgradient	10/16/2014	1547998.96	1938406.27	594.67	597.25	564.67	554.67	42.98	10
HGWC-15	Downgradient	10/20/2014	1547875.33	1937854.92	578.73	581.49	553.93	543.93	37.96	10
HGWC-16	Downgradient	10/21/2014	1548209.83	1937540.33	577.36	580.02	557.36	547.36	33.06	10
HGWC-17	Downgradient	10/22/2014	1548449.71	1937538.98	581.51	584.30	566.91	556.91	27.79	10
HGWC-18	Downgradient	10/22/2014	1548821.27	1937558.32	581.36	584.18	566.86	556.86	27.71	10
Piezometer										
MW-8	Downgradient	10/29/2014	1548171.86	1940016.70	584.25	587.37	565.05	555.05	32.72	10
MW-9	Downgradient	10/29/2014	1548131.38	1938922.16	588.42	591.67	569.12	559.12	32.95	10
MW-12	Downgradient	10/21/2014	1547853.78	1937525.46	580.59	584.33	555.79	545.79	38.94	10
MW-16	Downgradient	10/27/2014	1549104.17	1937940.06	571.70	575.22	562.20	552.20	23.42	10
MW-17	Downgradient	10/28/2014	1549163.28	1938345.81	583.68	587.67	568.98	558.98	29.09	10
MW-18	Downgradient	10/29/2014	1548984.15	1938712.73	589.75	593.07	571.05	561.05	32.42	10
MW-33	Downgradient	11/21/2019	1547973.50	1938412.13	591.19	593.92	566.60	556.60	37.72	10
MW-34D	Downgradient	5/6/2020	1547996.82	1938392.20	593.83	596.51	530.48	520.48	73.68	10
MW-35	Downgradient	5/13/2020	1547905.33	1938417.82	571.88	574.40	558.70	548.70	23.52	10
MW-36D	Downgradient	5/7/2020	1548435.43	1937538.19	581.44	584.10	534.12	524.12	57.65	10
Delineation Monitoring Well										
MW-21D	Downgradient	11/19/2018	1548814.86	1937555.78	581.16	583.84	542.36	532.36	51.88	10
MW-22	Downgradient	11/15/2018	1547854.68	1937832.04	576.05	578.51	551.45	541.45	37.47	10
MW-23D	Downgradient	11/15/2018	1547876.55	1937843.89	579.06	581.30	529.46	519.46	62.24	10
MW-37D	Downgradient	5/8/2020	1548803.01	1937551.05	580.95	583.58	514.65	504.65	76.63	10

Notes:

ft = feet.

ft BTOC = feet below top of casing.

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey data obtained 5/19/2020 and 10/10/2020 (for wells HGWA-42D, HGWA-43D and HGWA-44D).

(2) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Survey data obtained 5/19/2020 and 10/10/2020 (for wells HGWA-42D, HGWA-43D and HGWA-44D).

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

Table 2
Groundwater Sampling Event Summary for 2020
Plant Hammond AP-2, Floyd County, Georgia

Well ID	Hydraulic Location	Jan 22, 2020	Mar 2-3, 2020	Mar 25 to Apr 1, 2020	Jun 17-18, 2020	Sep 15 - 28, 2020	Nov 10, 2020	Dec 15, 2020
Purpose of Sampling Event:		Supplemental	App. IV Annual	Assessment	Supplemental	Assessment	Background	Background
<i>Compliance Monitoring Well</i>								
HGWA-1	Upgradient	--	X	X	--	X	--	--
HGWA-2	Upgradient	--	X	X	--	X	--	--
HGWA-3	Upgradient	--	X	X	--	X	--	--
HGWA-4	Upgradient	--	X	X	--	X	--	--
HGWA-5	Upgradient	--	X	X	--	X	--	--
HGWA-6	Upgradient	--	X	X	--	X	--	--
HGWA-42D	Upgradient	--	--	--	--	X	X	X
HGWA-43D	Upgradient	--	--	--	--	X	X	X
HGWA-44D	Upgradient	--	--	--	--	X	X	X
HGWC-14	Downgradient	--	X	X	--	X	--	--
HGWC-15	Downgradient	--	X	X	--	X	--	--
HGWC-16	Downgradient	--	X	X	--	X	--	--
HGWC-17	Downgradient	--	X	X	--	X	--	--
HGWC-18	Downgradient	--	X	X	--	X	--	--
<i>Delineation Monitoring Well</i>								
MW-21D	Downgradient	--	X	X	X	X	--	--
MW-22	Downgradient	--	X	X	--	X	--	--
MW-23D	Downgradient	--	X	X	--	X	--	--
MW-37D	Downgradient	--	--	--	X	X	--	--
<i>Piezometer</i>								
MW-33	Downgradient	X	--	X	X	X	--	--
MW-34D	Downgradient	--	--	--	X	X	--	--
MW-35	Downgradient	--	--	--	X	X	--	--
MW-36D	Downgradient	--	--	--	X	X	--	--

Table 3
Summary of Groundwater and Surface Water Elevations
Plant Hammond AP-2, Floyd County, Georgia

Well ID	Top of Casing Elevation ^(1,2) (ft)	March 2, 2020		March 23, 2020		September 14, 2020	
		Depth to Water (ft BTOC)	Groundwater Elevation ⁽¹⁾ (ft)	Depth to Water (ft BTOC)	Groundwater Elevation ⁽¹⁾ (ft)	Depth to Water (ft BTOC)	Groundwater Elevation ⁽¹⁾ (ft)
Compliance Monitoring Well Network							
HGWA-1	595.21	7.40	587.81	7.37	587.84	20.97	574.24
HGWA-2	587.92	4.91	583.01	5.15	582.77	11.14	576.78
HGWA-3	587.74	4.47	583.27	4.69	583.05	10.96	576.78
HGWA-4	587.60	3.80	583.80	3.74	583.86	12.08	575.52
HGWA-5	583.24	3.79	579.45	3.96	579.28	7.37	575.87
HGWA-6	583.38	3.08	580.30	3.16	580.22	7.20	576.18
HGWA-42D ⁽⁴⁾	586.17	--	--	--	--	13.74	572.43
HGWA-43D ⁽⁴⁾	595.08	--	--	--	--	20.75	574.33
HGWA-44D ⁽⁴⁾	594.79	--	--	--	--	19.59	575.20
HGWC-14	597.25	23.52	573.73	24.02	573.23	28.90	568.35
HGWC-15	581.49	12.55	568.94	14.43	567.06	17.17	564.32
HGWC-16	580.02	7.83	572.19	9.93	570.09	12.60	567.42
HGWC-17	584.30	14.75	569.55	16.95	567.35	18.30	566.00
HGWC-18	584.18	14.80	569.38	17.06	567.12	18.67	565.50
Piezometer							
MW-8	586.93	16.00	570.93	17.41	569.52	20.05	566.88
MW-9	590.95	12.21	578.74	12.88	578.07	18.09	572.86
MW-12	583.27	14.25	569.02	16.79	566.48	19.20	565.13
MW-16	574.22	4.30	569.92	5.08	569.14	9.52	564.70
MW-17	586.78	7.92	578.86	7.49	579.29	11.32	575.46
MW-18	592.28	9.68	582.60	10.25	582.03	17.66	574.62
MW-33	593.92	20.76	573.16	21.27	572.65	25.95	567.97
MW-34D ⁽³⁾	596.51	--	--	--	--	30.86	565.65
MW-35 ⁽³⁾	574.40	--	--	--	--	9.60	564.80
MW-36D ⁽³⁾	584.10	--	--	--	--	17.40	566.70
Delineation Monitoring Wells							
MW-21D	583.84	13.75	570.09	15.71	568.13	17.70	566.14
MW-22	578.51	9.78	568.73	12.29	566.22	14.45	564.06
MW-23D	581.30	12.39	568.91	15.15	566.15	17.29	564.01
MW-37D ⁽³⁾	583.58	--	--	--	--	17.45	566.13
Surface Water Level Gauge Point							
Coosa River	--	--	568.50	--	--	--	--
Unnamed Creek	--	--	--	--	--	--	565.12

Notes:

-- = not measured or not applicable.

ft = feet.

ft BTOC = feet below top of casing.

(1) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88).

(2) Survey data obtained 5/19/2020 and 10/10/2020 (for wells HGWA-42D, HGWA-43D, and HGWA-44D).

(3) MW-34D, MW-35, MW-36D and MW-37D installed in May 2020.

(4) HGWA-42D, HGWA-43D, and HGWA-44D installed in August 2020.

Table 4
 Groundwater Gradient and Flow Velocity Calculations for 2020
 Plant Hammond AP-2, Floyd County, Georgia

Flow Path Direction ⁽¹⁾	March 2, 2020				March 23, 2020				September 14, 2020				Average $\Delta h/\Delta l$ (ft/ft)
	h_1 (ft)	h_2 (ft)	Δl (ft)	$\Delta h/\Delta l$ (ft/ft)	h_1 (ft)	h_2 (ft)	Δl (ft)	$\Delta h/\Delta l$ (ft/ft)	h_1 (ft)	h_2 (ft)	Δl (ft)	$\Delta h/\Delta l$ (ft/ft)	
Westerly Flow Path (MW-18 to HGWC-17)	582.60	569.55	1,300	0.010	582.03	567.35	1,300	0.011	574.62	566.00	1,300	0.007	0.009

Flow Path Direction ⁽¹⁾	Averaged for 2020			
	K_h (ft/d)	n	$\Delta h/\Delta l$ (ft/ft)	V (ft/d) ⁽²⁾
Westerly Flow Path (MW-18 to HGWC-17)	0.47	0.15	0.009	0.028

- Notes:
- ft = feet
 - ft/d = feet per day
 - ft/ft = feet per foot
 - ft/yr = feet per year
 - h_1, h_2 = point of interpreted groundwater elevation
 - $\Delta h/\Delta l$ = hydraulic gradient
 - K_h = hydraulic conductivity
 - Δl = distance between location 1 and 2
 - n = effective porosity
 - V = groundwater flow velocity
- (1) Flow path direction relative to the orientation of AP-2 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-2, Floyd County, Georgia

Well ID:		HGWA-1	HGWA-1	HGWA-1	HGWA-2	HGWA-2	HGWA-2	HGWA-3	HGWA-3	HGWA-3	HGWA-4	HGWA-4	HGWA-4	HGWA-5	HGWA-5	HGWA-5	HGWA-6	HGWA-6	HGWA-6	
Sample Date:		3/2/2020	3/25/2020	9/15/2020	3/2/2020	3/25/2020	9/15/2020	3/2/2020	3/25/2020	9/15/2020	3/2/2020	3/26/2020	9/15/2020	3/2/2020	3/26/2020	9/15/2020	3/2/2020	3/25/2020	9/15/2020	
Parameter ^(1,2,3)																				
APPENDIX III	Boron	--	0.025 J	0.017 J	--	0.039 J	0.044 J	--	0.0096 J	0.0071 J	--	0.012 J	0.013 J	--	0.0072 J	0.012 J	--	0.021 J	0.016 J	
	Calcium	--	127	103	--	23.0	21.1	--	89.8	73.1	--	14.9	20.4	--	27.8	27.9	--	58.1	49.9	
	Chloride	--	20.4	13.4	--	5.2	5.0	--	6.1	6.0	--	3.4	3.3	--	1.4	1.7	--	1.2	1.2	
	Fluoride	0.076 J	0.098 J	0.082 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.053 J	0.066 J	0.061 J	<0.050	<0.050	<0.050
	pH	7.10	6.95	7.15	5.43	5.36	5.22	7.12	7.40	7.29	5.63	5.77	5.75	6.80	6.38	6.33	7.67	7.39	7.37	
	Sulfate	--	85.9	47.3	--	46.3	51.5	--	50.5	44.7	--	<0.50	<0.50	--	21.6	21.2	--	35.1	35.3	
	TDS	--	496	265	--	138	124	--	284	258	--	69.0	93.0	--	104	116	--	240	217	
APPENDIX IV	Antimony	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	
	Arsenic	<0.00035	<0.00035	<0.00078	0.00043 J	<0.00035	<0.00078	0.00040 J	<0.00035	<0.00078	<0.00035	<0.00035	<0.00078	<0.00035	<0.00035	<0.00078	<0.00035	<0.00035	<0.00078	
	Barium	0.034	0.043	0.035	0.11	0.12	0.12	0.14	0.13	0.12	0.023	0.026	0.024	0.053	0.045	0.045	0.19	0.19	0.19	
	Beryllium	<0.000074	<0.000074	<0.000046	0.00014 J	0.00016 J	0.00013 J	<0.000074	<0.000074	<0.000046	0.00019 J	0.000076 J	<0.000046	<0.000074	<0.000074	<0.000046	<0.000074	<0.000074	<0.000046	
	Cadmium	<0.00011	<0.00011	<0.00012	<0.00011	0.00014 J	0.00012 J	<0.00011	<0.00011	<0.00012	<0.00011	<0.00011	<0.00012	<0.00011	<0.00011	<0.00012	<0.00011	<0.00011	<0.00012	
	Chromium	<0.00039	0.00072 J	<0.00055	0.00041 J	<0.00039	<0.00055	<0.00039	<0.00039	<0.00055	0.00040 J	<0.00039	<0.00055	0.00050 J	<0.00039	<0.00055	<0.00039	<0.00039	<0.00055	
	Cobalt	<0.00030	<0.00030	<0.00038	0.019	0.020	0.021	<0.00030	<0.00030	<0.00038	0.00063 J	0.00058 J	<0.00038	0.00093 J	0.0013 J	0.00047 J	<0.00030	<0.00030	<0.00038	
	Fluoride	0.076 J	0.098 J	0.082 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.053 J	0.066 J	0.061 J	<0.050	<0.050	<0.050	
	Lead	0.000048 J	<0.000046	<0.000036	0.000095 J	0.00011 J	0.000080 J	<0.000046	<0.000046	0.000042 J	0.00026 J	0.000059 J	0.000049 J	<0.000046	<0.000046	<0.000036	<0.000046	<0.000046	<0.000036	
	Lithium	0.0012 J	0.00083 J	0.00087 J	0.0017 J	0.0017 J	0.0015 J	0.0037 J	0.0035 J	0.0026 J	0.0012 J	0.00095 J	<0.00081	0.0036 J	0.0029 J	0.0030 J	0.012 J	0.011 J	0.0095 J	
	Mercury	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	
	Molybdenum	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	
	Comb. Radium 226/228	0.610 U	4.36	0.748 U	1.58	0.621 U	0.124 U	0.249 U	0.833 U	0.161 U	0.937 U	0.578 U	0.179 U	0.547 U	0.907 U	0.601 U	0.676 U	0.509 U	1.36 U	
	Selenium	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	
Thallium	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	0.000057 J	<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 MDL (Specific to combined radium).

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

(2) Metals were analyzed by EPA Method 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-42D, HGWA-43D, and HGWA-44D were analyzed for the complete list of Appendix III and Appendix IV constituents to establish background groundwater quality conditions.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:		HGWA-42D ⁽⁴⁾	HGWA-42D ⁽⁴⁾	HGWA-43D ⁽⁴⁾	HGWA-43D ⁽⁴⁾	HGWA-44D ⁽⁴⁾	HGWA-44D ⁽⁴⁾	HGWC-14	HGWC-14	HGWC-14	HGWC-15	HGWC-15	HGWC-15	HGWC-16	HGWC-16	HGWC-16	HGWC-17	HGWC-17	HGWC-17	
Sample Date:		9/17/2020	11/11/2020	9/16/2020	11/10/2020	9/16/2020	11/10/2020	3/3/2020	3/30/2020	9/18/2020	3/3/2020	3/26/2020	9/17/2020	3/3/2020	3/30/2020	9/17/2020	3/3/2020	3/31/2020	9/16/2020	
Parameter ^(1,2,3)																				
APPENDIX III	Boron	0.098 J	0.058 J	0.061 J	0.057 J	0.23	0.29	--	11.7	11.0	--	2.1	2.2	--	2.4	2.4	--	6.9	6.7	
	Calcium	43.8	44.4	56.0	63.3	30.0	33.6	--	600	623	--	240	188	--	208	190	--	328	277	
	Chloride	5.8	3.1	4.1	4.4	7.2	7.8	--	236	288	--	142	108	--	80.2	99.3	--	161	156	
	Fluoride	0.20	0.10	0.22	0.19	0.52	0.59	<0.050	0.092 J	<0.050	0.064 J	<0.050	<0.050	<0.050	0.059 J	<0.050	<0.050	<0.050	<0.050	0.058 J
	pH	7.62	7.68	7.52	7.27	7.83	7.84	4.77	4.57	4.88	6.00	6.03	6.11	7.10	7.09	7.11	6.35	6.28	6.35	
	Sulfate	10.9	9.4	43.0	39.0	6.9	6.3	--	1150	1260	--	438	416	--	223	254	--	484	467	
	TDS	188	175	272	307	270	287	--	2590	2440	--	1000	956	--	787	804	--	1310	1220	
APPENDIX IV	Antimony	0.00055 J	<0.00028	0.00051 J	0.00043 J	0.00049 J	<0.00028	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	
	Arsenic	<0.00078	<0.00078	<0.00078	0.0021 J	<0.00078	<0.00078	0.0035 J	0.0051	0.0029 J	<0.00035	<0.00035	<0.00078	<0.00035	0.0011 J	<0.00078	<0.00035	0.00080 J	<0.00078	
	Barium	0.13	0.18	0.26	0.25	0.24	0.38	0.018	0.020	0.019	0.018	0.016	0.017	0.12	0.11	0.11	0.026	0.029	0.025	
	Beryllium	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	0.00043 J	0.00043 J	0.00043 J	<0.000074	<0.000074	<0.000046	<0.000074	<0.000074	<0.000046	<0.000074	<0.000074	<0.000046	
	Cadmium	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00011	<0.00011	<0.00012	0.0015 J	0.0016 J	0.0016 J	<0.00011	<0.00011	<0.00012	<0.00011	<0.00011	<0.00012	
	Chromium	<0.00055	0.00063 J	<0.00055	<0.00055	0.0012 J	0.00089 J	0.00042 J	0.00066 J	<0.00055	<0.00039	<0.00039	<0.00055	0.00071 J	0.00040 J	<0.00055	0.0018 J	<0.00039	<0.00055	
	Cobalt	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	0.029	0.028	0.027	0.030	0.022	0.026	0.00037 J	<0.00030	<0.00038	0.016	0.016	0.013	
	Fluoride	0.20	0.10	0.22	0.19	0.52	0.59	<0.050	0.092 J	<0.050	0.064 J	<0.050	<0.050	<0.050	0.059 J	<0.050	<0.050	<0.050	0.058 J	
	Lead	0.000062 J	0.000084 J	0.000050 J	0.000069 J	0.00021 J	0.00020 J	0.0017 J	0.0015 J	0.0012 J	0.000053 J	<0.000046	<0.000036	0.00016 J	0.000073 J	0.000078 J	0.00013 J	0.000077 J	0.000065 J	
	Lithium	0.0039 J	0.0086 J	0.0018 J	0.0013 J	0.014 J	0.025 J	<0.00078	<0.00078	<0.00081	0.0084 J	0.0061 J	0.0094 J	0.0047 J	0.0041 J	0.0043 J	0.0012 J	0.00090 J	0.0012 J	
	Mercury	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	
	Molybdenum	0.0037 J	<0.00069	0.0044 J	0.0072 J	0.0019 J	0.0018 J	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	
	Comb. Radium 226/228	0.665 U	1.28	0.531 U	0.788 U	0.422 U	0.293 U	1.84	1.08 U	1.80 U	1.43	0.855 U	0.395 U	1.32 U	0.288 U	1.10 U	1.33	0.591 U	0.295 U	
Selenium	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	0.0045 J	0.0049 J	0.0045 J	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016		
Thallium	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	0.00026 J	0.00028 J	0.00028 J	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	0.00011 J	0.00014 J	<0.00014		

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:		HGWC-18	HGWC-18	HGWC-18	MW-21D	MW-21D	MW-21D	MW-21D	MW-22	MW-22	MW-22	MW-23D	MW-23D	MW-23D	MW-33	MW-33	MW-33	MW-33	
Sample Date:		3/3/2020	3/31/2020	9/15/2020	3/3/2020	4/1/2020	6/17/2020	9/21/2020	3/2/2020	3/27/2020	9/17/2020	3/2/2020	4/1/2020	9/17/2020	1/22/2020	4/1/2020	6/17/2020	9/21/2020	
Parameter ^(1,2,3)																			
APPENDIX III	Boron	--	9.4	9.4	--	6.3	5.8	5.6	--	2.4	2.3	--	3.5	2.7	11.2	11.6	10.3	9	
	Calcium	--	418	430	--	438	434	428	--	212	203	--	342	361	638	567	561	562	
	Chloride	--	126	150	--	236	223	236	--	141	153	--	166	171	231	242	250	273	
	Fluoride	0.34	0.45	0.31	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.18 J	0.15 J	0.25	0.14
	pH	4.55	4.43	4.47	6.72	6.90	6.47	6.92	5.97	5.71	5.66	7.05	6.80	6.71	4.51	4.35	4.36	4.48	
	Sulfate	--	934	1080	--	889	901	1010	--	419	468	--	478	490	1250	1210	1210	1290	
	TDS	--	1860	1890	--	1940	2100	2060	--	1100	1090	--	1530	1360	2310	2590	2540	2340	
APPENDIX IV	Antimony	<0.00027	--	--	<0.00027	--	--	--	<0.00027	--	--	<0.00027	--	--	--	--	--	--	
	Arsenic	0.0057	0.0056	0.0074	<0.00035	0.0013 J	<0.00035	<0.00078	<0.00035	<0.00035	<0.00078	<0.00035	0.00082 J	<0.00078	--	0.0061	0.0031 J	0.0083	
	Barium	0.026	0.029	0.030	0.058	0.066	0.054	0.049	0.027	0.025	0.020	0.060	0.065	0.057	--	0.027	0.024	0.024	
	Beryllium	0.0029 J	0.0030	0.0033	<0.000074	<0.000074	<0.000074	<0.000046	<0.000074	<0.000074	0.000047 J	<0.000074	<0.000074	<0.000046	--	0.0011 J	0.00099 J	0.00090 J	
	Cadmium	0.0021 J	0.0017 J	0.0019 J	<0.00011	<0.00011	<0.00011	<0.00012	0.0021 J	0.0019 J	0.0021 J	<0.00011	<0.00011	0.00060 J	--	0.00022 J	0.00021 J	0.00016 J	
	Chromium	0.00040 J	<0.00039	0.00063 J	<0.00039	<0.00039	0.00057 J	<0.00055	<0.00039	<0.00039	<0.00055	<0.00039	0.00086 J	<0.00055	--	0.00069 J	<0.00039	<0.00055	
	Cobalt	0.15	0.16	0.16	<0.00030	<0.00030	<0.00030	<0.00038	0.043	0.025	0.029	0.0011 J	0.0011 J	0.00096 J	0.052	0.058	0.053	0.047	
	Fluoride	0.34	0.45	0.31	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.18 J	0.15 J	0.25	0.14
	Lead	0.0013 J	0.0014 J	0.0014 J	0.000047 J	0.000048 J	<0.000046	<0.000036	0.000094 J	<0.000046	<0.000036	0.000051 J	<0.000046	0.00016 J	--	0.0017 J	0.0017 J	0.0017 J	
	Lithium	0.012 J	0.012 J	0.014 J	0.026 J	0.026 J	0.023 J	0.022 J	0.0015 J	0.0013 J	0.0011 J	0.0025 J	0.0024 J	0.0021 J	--	0.0011 J	0.00097 J	0.00086 J	
	Mercury	<0.00014	--	--	<0.00014	--	--	--	<0.00014	--	--	<0.00014	--	--	--	--	--	--	
	Molybdenum	<0.00095	<0.00095	<0.00069	0.025	0.024	0.019	0.017	<0.00095	<0.00095	<0.00069	0.0030 J	0.0032 J	0.0026 J	--	<0.00095	<0.00095	<0.00069	
	Comb. Radium 226/228	2.35	2.70	1.65	1.94	0.758 U	0.691 U	0.436 U	0.872 U	0.960 U	0.0879 U	0.964 U	0.914 U	0.320 U	--	2.57	1.43 U	2.53	
	Selenium	0.014	0.019	0.059	<0.0013	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	0.0020 J	<0.0013	<0.0013	<0.0016	--	0.011	0.014	0.041	
Thallium	0.00013 J	0.00015 J	0.00016 J	<0.000052	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	--	0.00029 J	0.00028 J	0.00029 J		

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:		MW-34D	MW-34D	MW-35	MW-35	MW-36D	MW-36D	MW-37D	MW-37D
Sample Date:		6/18/2020	9/23/2020	6/18/2020	9/21/2020	6/18/2020	9/23/2020	6/18/2020	9/23/2020
Parameter ^(1,2,3)									
APPENDIX III	Boron	9.4	10.2	11.9	12.3	0.067 J	0.055 J	0.14	0.12
	Calcium	584	556	517	503	65.2	62.1	165	158
	Chloride	259	294	229	257	2.3	2.2	151	166
	Fluoride	0.082 J	<0.050	0.053 J	<0.050	0.053 J	<0.050	0.10	0.065 J
	pH	7.35	7.05	5.46	5.40	6.45	7.62	7.78	7.62
	Sulfate	1100	1080	1160	1220	50.5	56.0	286	256
	TDS	2320	2430	2310	2210	237	256	888	894
APPENDIX IV	Antimony	--	--	--	--	--	--	--	--
	Arsenic	0.0032 J	0.0010 J	0.0050 J	0.0059	0.00046 J	<0.00078	0.0021 J	0.00095 J
	Barium	0.044	0.038	0.029	0.028	0.15	0.17	0.19	0.14
	Beryllium	0.00015 J	<0.000046	0.00032 J	0.00040 J	<0.000074	<0.000046	0.00012 J	<0.000046
	Cadmium	<0.00011	<0.00012	0.00053 J	0.0010 J	<0.00011	<0.00012	<0.00011	<0.00012
	Chromium	0.0059 J	<0.00055	<0.00039	0.00079 J	0.00045 J	<0.00055	0.0048 J	<0.00055
	Cobalt	0.011	0.0056	0.091	0.084	<0.00030	<0.00038	0.0015 J	<0.00038
	Fluoride	0.082 J	<0.050	0.053 J	<0.050	0.053 J	<0.050	0.10	0.065 J
	Lead	0.00087 J	<0.000036	0.00016 J	0.00099 J	<0.000046	0.000088 J	0.0017 J	0.000082 J
	Lithium	0.0021 J	0.0011 J	0.0046 J	0.0036 J	0.0087 J	0.0084 J	0.038 J	0.031
	Mercury	--	--	--	--	--	--	--	--
	Molybdenum	<0.00095	<0.00069	<0.00095	<0.00069	<0.00095	<0.00069	0.023	0.015
	Comb. Radium 226/228	1.36	0.563 U	2.02	3.85	1.85	0.410 U	1.79	0.980 U
	Selenium	0.0025 J	<0.0016	0.014	0.037	<0.0013	<0.0016	<0.0013	<0.0016
Thallium	0.00015 J	<0.00014	0.00013 J	<0.00014	<0.000052	<0.00014	<0.000052	<0.00014	

Table 6
Summary of Background Concentrations and Groundwater Protection Standards
Plant Hammond AP-2, Floyd County, Georgia

Analyte	Units	Background ⁽²⁾	Federal GWPS ⁽³⁾	State GWPS ⁽⁴⁾
Antimony	mg/L	0.003	0.006	0.006
Arsenic	mg/L	0.005	0.01	0.01
Barium	mg/L	0.22; 0.38	2	2
Beryllium	mg/L	0.003	0.004	0.004
Cadmium	mg/L	0.0025	0.005	0.005
Chromium	mg/L	0.019	0.1	0.1
Cobalt	mg/L	0.038	0.038	0.038
Fluoride	mg/L	0.36; 0.59	4	4
Lead	mg/L	0.005	0.015	0.005
Lithium	mg/L	0.03	0.04	0.03
Mercury	mg/L	0.005	0.002	0.002
Molybdenum	mg/L	0.01	0.1	0.01
Selenium	mg/L	0.01	0.05	0.05
Thallium	mg/L	0.001	0.002	0.002
Combined Radium-226/228	pCi/L	4.36	5	5

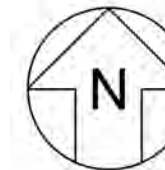
Notes:

"mg/L" = milligrams per liter.

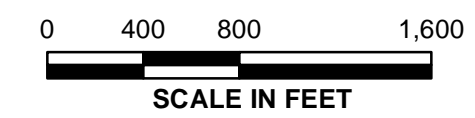
"pCi/L" = picocuries per liter.

1. Statistical analyses were performed on semiannual monitoring events for data through June 2020 and data through November 2020.
2. The background limits were used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a). Where two numbers are present, they denote the different background concentrations for each of the two semiannual monitoring events in the order that they were determined.
3. Under 40 CFR §257.95(h)(1-3) the GWPS is: (i) the maximum contaminant level (MCL) established under 141.62 and 141.66 of this title; (ii) where an MCL has not been established a rule-specific GWPS is used; or (iii) background concentrations for constituents where the background level is higher than the MCL or rule-specified GWPS.
4. Under the existing Georgia EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background concentrations for constituents where the background level is higher than the MCL.

FIGURES



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



SITE LOCATION MAP

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

Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

KENNESAW, GA

JANUARY 2021







FIGURE
1

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N:\GA Power\Plant Hammond\GIS\mxd\Hammond2020\CCR_Reports\AP-2\Figure 2_WellMap.mxd 1/18/2021 3:57:58 PM



LEGEND

-  Compliance Monitoring Well
-  Horizontal Delineation Well
-  Vertical Delineation Well
-  Piezometer
-  Surface Water Level Gauge Point
-  Surface Water Sample Point

Note:
 1. Aerial photograph source: Google Earth Pro, August 2019.
 2. Two upstream Coosa River surface water sampling locations, H-0.5 and H-2, are not shown on the figure and located at 1942375.24, 1548207.69 and 1943448.96, 1543373.73, respectively.



MONITORING WELL NETWORK AND SAMPLING LOCATION MAP

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

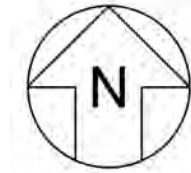
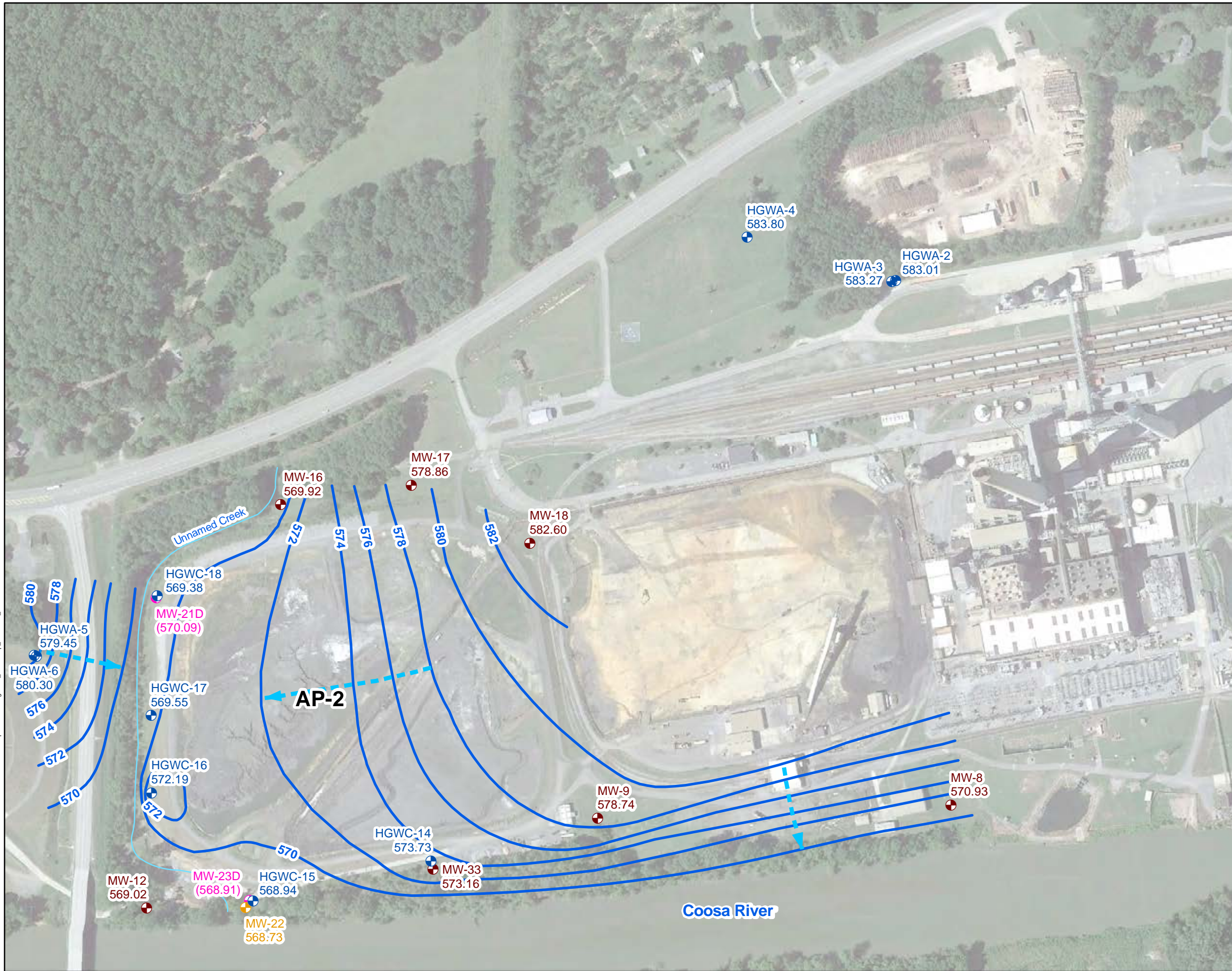
Prepared For: 

Prepared By: 

KENNESAW, GA JANUARY 2021

FIGURE 2

N:\GA Power\Plant Hammond\GIS\mxd\Hammond\2020\CCR_Reports\AP-2\Figure 3_POT Map_Mar2020_Scan.mxd 1/4/2021 11:38:29 AM



LEGEND

- Compliance Monitoring Well
- Horizontal Delineation Monitoring Well
- Vertical Delineation Monitoring Well
- Piezometer
- March 2, 2020 Groundwater Elevation Iso-Contour (ft)
- Approximate Groundwater Flow Direction
- Unnamed Creek

Notes:

1. Water level elevation recorded on March 2, 2020. Elevation provided in feet referenced to 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. The map shows only the wells/piezometers installed at the time of the gauging event.
4. Aerial photograph source: Google Earth Pro, August 2019.



SCALE IN FEET

**POTENTIOMETRIC SURFACE CONTOUR
MAP - MARCH 2, 2020**

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

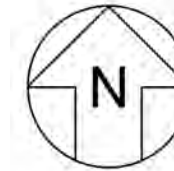
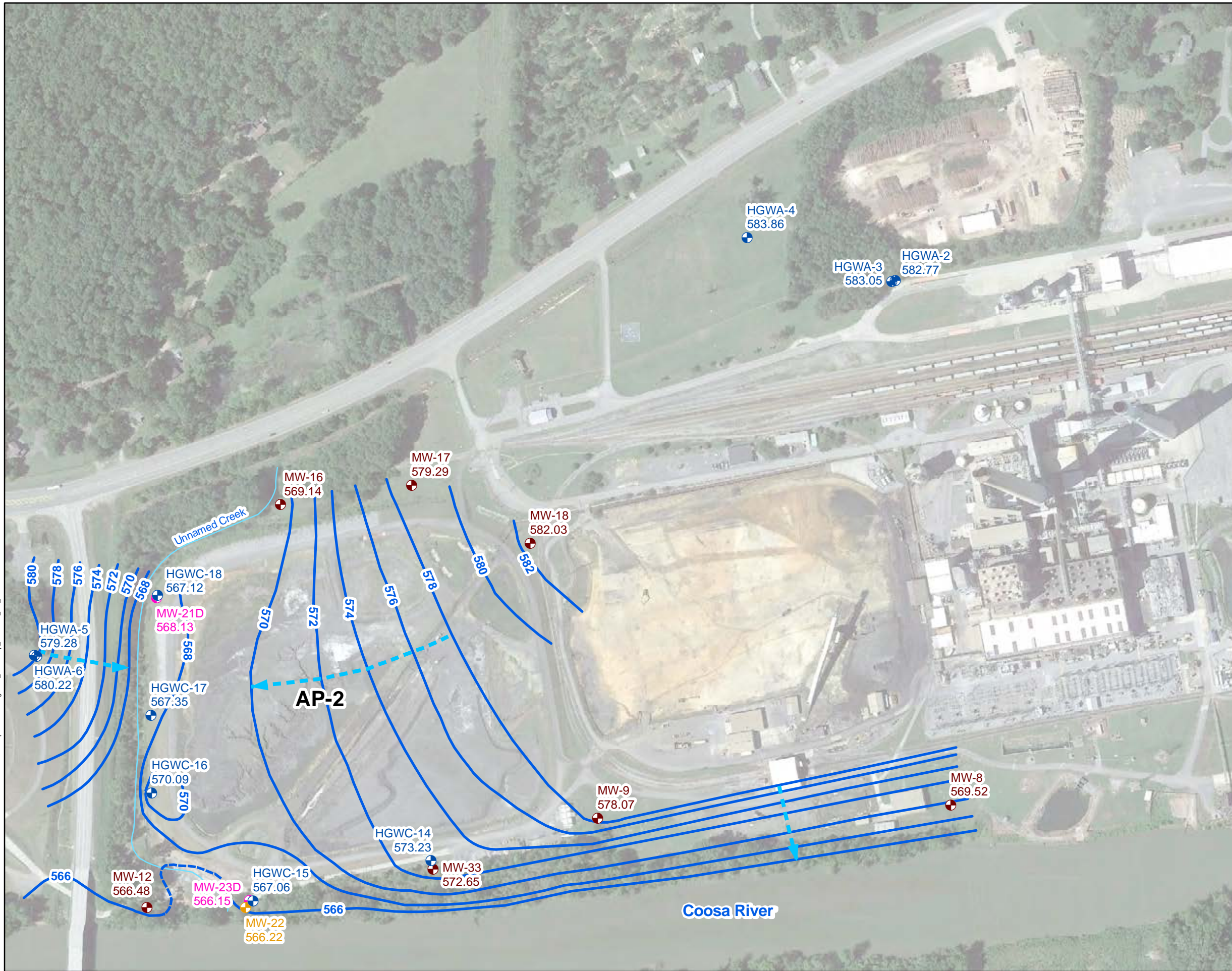
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA JANUARY 2021

**FIGURE
3**

N:\GA Power\Plant Hammond\GW Services\GIS\mxd\Hammond\2020\CCR_Reports\AP-2\Figure 4_POT Map_Mar2020_SA_AP2.mxd 1/4/2021 11:55:34 AM



LEGEND

- Compliance Monitoring Well
- Horizontal Delineation Monitoring Well
- Vertical Delineation Monitoring Well
- Piezometer
- March 23, 2020 Groundwater Elevation Iso-Contour (ft)
- Approximate Groundwater Flow Direction
- Unnamed Creek

Notes:

1. Water level elevation recorded on March 23, 2020. Elevation provided in feet referenced to 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. The map shows only the wells/piezometers installed at the time of the gauging event.
4. Aerial photograph source: Google Earth Pro, August 2019.



SCALE IN FEET

**POTENTIOMETRIC SURFACE CONTOUR
MAP - MARCH 23, 2020**

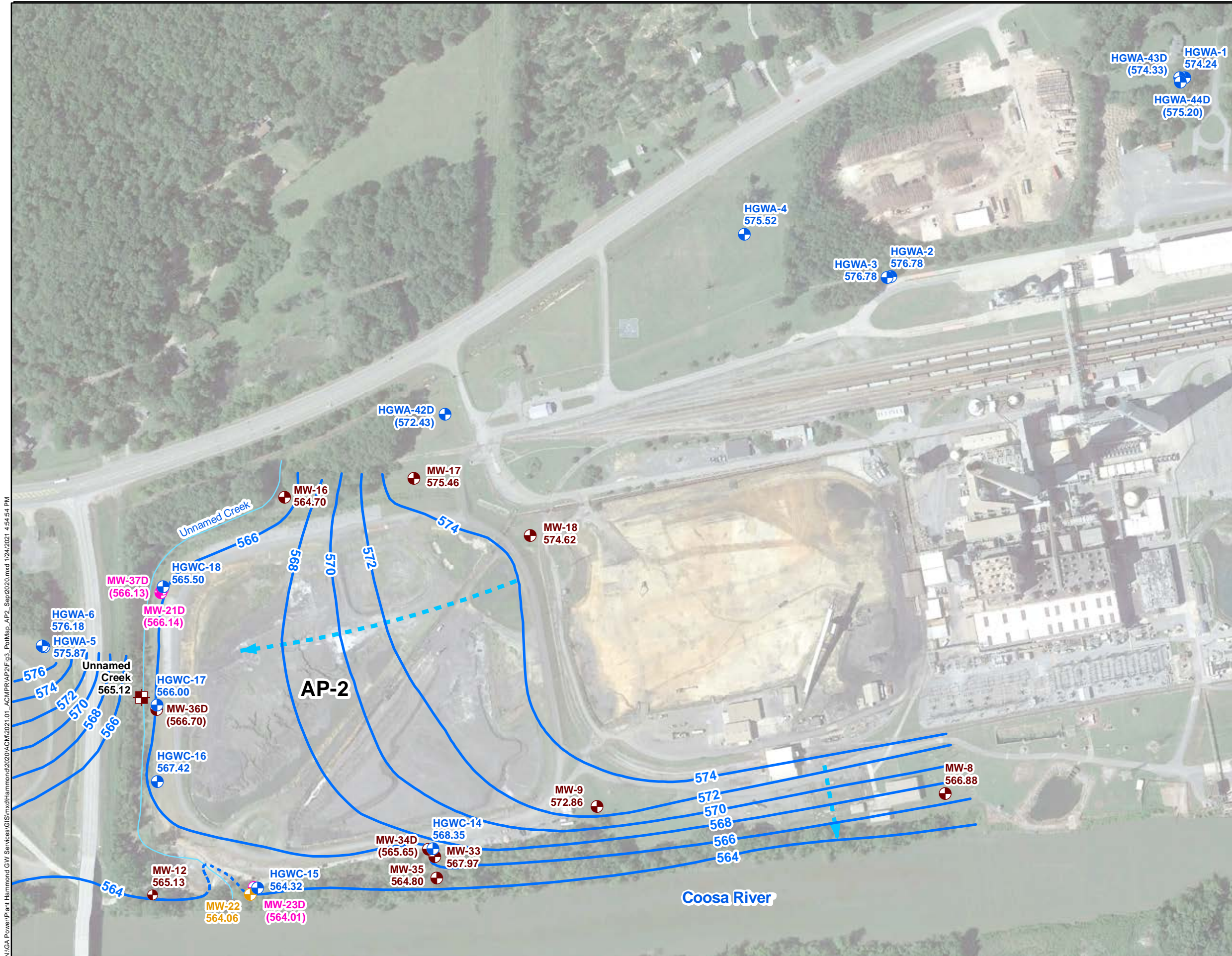
GEORGIA POWER COMPANY
PLANT HAMMOND AP-2
ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

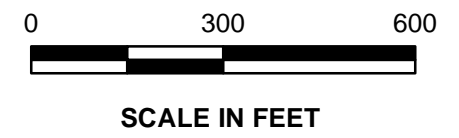
KENNESAW, GA JANUARY 2021

**FIGURE
4**



- LEGEND**
- Compliance Monitoring Well
 - Horizontal Delineation Well
 - Vertical Delineation Well
 - Piezometer
 - Surface Water Level Gauge Point
 - September 2020 Groundwater Elevation Iso-Contour (ft)
 - - - Estimated Groundwater Elevation Contour
 - ▶ Approximate Groundwater Flow Direction
 - Unnamed Creek

- Notes:
1. Water level elevations recorded on September 14, 2020. Elevation provided in feet referenced to 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. The map shows only the wells/piezometers installed at the time of the gauging event.
 4. Aerial photograph source: Google Earth Pro, August 2019.



**POTENTIOMETRIC SURFACE CONTOUR
MAP - SEPTEMBER 2020**

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

Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

**FIGURE
5**

KENNESAW, GA JANUARY 2021

N:\GA Power\Plant Hammond\GIS\mxd\Hammond\2020\ACM\2021_01_ACM\PRAP2\Fig3_PotMap_AP2_Sep2020.mxd, 1/24/2021 4:54:54 PM

APPENDIX A

Well Design, Installation, and Development
Report – Addendum No 2, Plant Hammond
Ash Pond 2 (AP-2), July 2020

Prepared for

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

WELL DESIGN, INSTALLATION, AND DEVELOPMENT REPORT - ADDENDUM

No. 2

**PLANT HAMMOND ASH POND 2
(AP-2)**

Prepared by

Geosyntec 
consultants

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581B

July 2020



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

Plant Hammond

Ash Pond 2

July 17, 2020

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

Whitney Law, P.E.

Project Manager

Geosyntec Consultants

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	DRILLING AND WELL INSTALLATION.....	2
2.1	Drilling Method	2
2.2	Screened Interval	2
2.3	Well Casings and Screens.....	2
2.4	Well Intake Design	3
2.5	Filter Pack.....	3
2.6	Annular Seal	4
2.7	Cap and Protective Casing.....	4
3.	WELL DEVELOPMENT.....	5
4.	SURVEY	6
5.	REFERENCES	7

LIST OF TABLES

Table 1	Summary of Well Construction Details
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LIST OF FIGURES

Figure 1	Groundwater Monitoring Network Map
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LIST OF APPENDICES

Appendix A	Well Driller Performance Bonds
Appendix B	Boring and Well Construction Logs
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
GPC	Georgia Power Company
NAD	North America Datum
NAVD	North American Vertical Datum
NSF	National Sanitation Foundation
ORP	oxygen reduction potential
PVC	polyvinyl chloride
SCS	Southern Company Services
TOC	top of casing
US EPA	United States Environmental Protection Agency

1. INTRODUCTION

This report provides details regarding the design, installation, and development of four groundwater monitoring wells to supplement the current groundwater monitoring system at Georgia Power Company (GPC) Plant Hammond (Site) Ash Pond 2 (AP-2). The report was prepared as an addendum to previously submitted well design, installation, development and decommissioning reports issued for the Site (ERM, 2017; Geosyntec, 2019b), 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-2 includes 11 wells associated with the CCR compliance monitoring well network and a network of secondary groundwater monitoring wells and piezometers. The locations of these wells and piezometers are shown on **Figure 1**.

2. DRILLING AND WELL INSTALLATION

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

This report presents the details for the installation and development of AP-2 area wells MW-34D, MW-35, MW-36D, and MW-37D. 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 Compact Crawler drill rig with a 6-inch sonic drill rod was used to install all 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. The four new wells at AP-2 are screened from approximately 561 to 507 feet (referenced to the North American Vertical Datum of 1988). All wells are constructed with 10 feet of well screen.

2.3 Well Casings and Screens

The wells were constructed of 2-inch inner diameter Schedule 40 polyvinyl chloride (PVC) casing with flush-threaded fittings. Each well was installed with a 10-foot nominal length pre-packed dual-wall well screen with 0.010-inch slots. The casings and pre-

packed screens arrived pre-cleaned and packaged by the manufacturer. The pre-packed well screen was constructed onsite by packing sand between slotted PVC and the well screen. Well construction materials are sufficiently durable to resist chemical and physical degradation and not interfere with the quality of groundwater samples. Casing and screens are flush-threaded. Solvent or glue was not used to construct the wells. A threaded bottom cap was attached to the bottom of the screen. The PVC products used were American Society for Testing and Materials (ASTM) and National Sanitation Foundation (NSF) rated. Well screen interval details are provided in **Table 1**.

2.4 Well Intake Design

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

2.5 Filter Pack

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

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

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

2.6 Annular Seal

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

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

2.7 Cap and Protective Casing

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

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

3. WELL DEVELOPMENT

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

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

4. SURVEY

Upon completion of the well installation, the horizontal locations and vertical elevations were surveyed by a Georgia-licensed surveyor. The top of the PVC well casing [top of casing (TOC) elevation] and the survey pin installed at each well pad were surveyed to within 0.5-foot horizontal accuracy and to 0.01-foot vertical accuracy. The horizontal location (i.e., northings and eastings) was recorded in feet relative to the North America Datum of 1983 (NAD) with the vertical elevation recorded in feet relative to the North American Vertical Datum of 1988. Certified survey data are provided in the well construction table (**Table 1**). A copy of the certified well survey data for the AP-2 well network is provided in **Appendix D**.

5. REFERENCES

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

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

Geosyntec Consultants, 2019b. Well Design, Installation and Development Report – Addendum, Plant Hammond Ash Ponds 1 and 2 (AP-1 and AP-2). June 2019.

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

TABLE

Table 1
 Summary of Well Construction Details
 Plant Hammond AP-2, 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⁾
MW-34D	Delineation	5/6/2020	1547996.82	1938392.20	593.83	596.51	533.16	523.16	71.00
MW-35	Delineation	5/13/2020	1547905.33	1938417.82	571.88	574.40	561.21	551.21	21.00
MW-36D	Delineation	5/7/2020	1548435.43	1937538.19	581.44	584.10	536.77	526.77	55.00
MW-37D	Delineation	5/8/2020	1548803.01	1937551.05	580.95	583.58	517.28	507.28	74.00

Notes:

ft bgs = feet below ground surface.

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

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





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

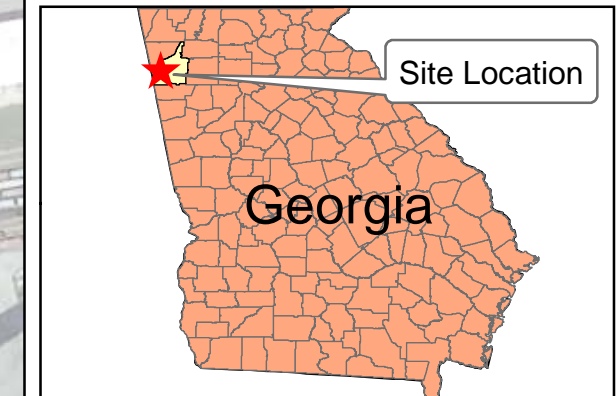
FIGURE

N:\GA Power\Plant Hammond\GIS\mxd\Hammond\2020\Well Installation Reports\2020_06_AP2\AP2\Figure 1_GW Monitoring Network_AP2.mxd 7/16/2020 4:16:09 PM



LEGEND

-  Compliance Monitoring Well
-  Horizontal Delineation Monitoring Well
-  Piezometer
-  Vertical Delineation Monitoring Well



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



SCALE IN FEET

GROUNDWATER MONITORING NETWORK MAP

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

Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

KENNESAW, GA

JULY 2020

FIGURE
1

APPENDIX A

Well Driller Performance Bonds

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company

, Surety upon

a certain Bond No. 800033976

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

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

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

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

does hereby continue said bond in force for the further period

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

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

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

Description of bond Performance Bond for Water Well Contractors

Premium: \$1200.00

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

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

Atlantic Specialty Insurance Company

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

Parker, Smith & Feek, Inc.

Agent

2233 112th Ave NE Bellevue, WA 98004

Address of Agent

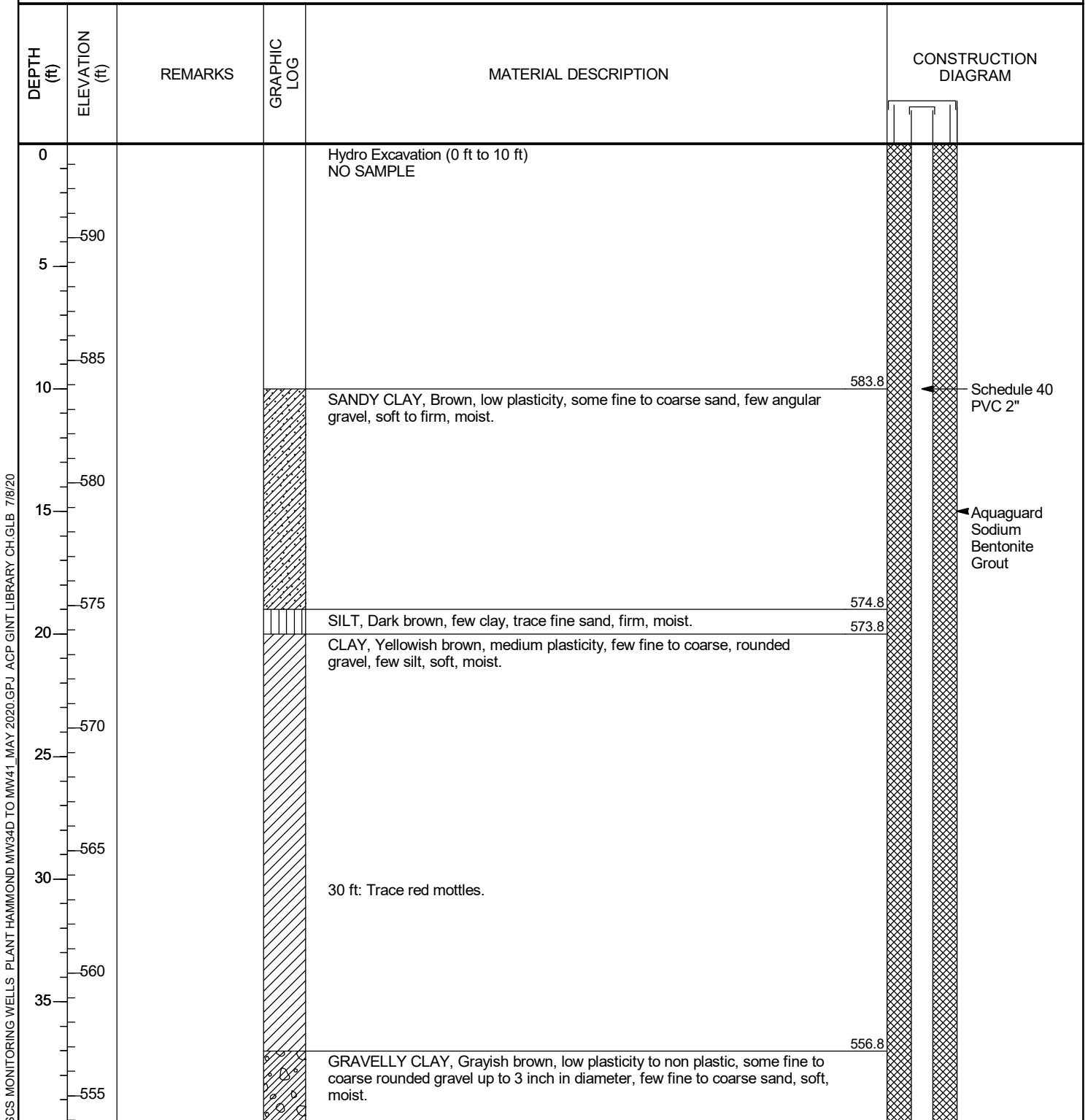
425-709-3600

Telephone Number of Agent

APPENDIX B

Boring and Well Construction Logs

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/6/20</u> COMPLETED <u>5/6/20</u>	NORTHING <u>1547996.82 ft</u> EASTING <u>1938392.20 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>593.83 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>596.51 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>



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

(Continued Next Page)

CLIENT Southern Company Services

PROJECT NAME Plant Hammond Well Installation

PROJECT NUMBER GW6581B

PROJECT LOCATION Plant Hammond

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40					
	550				
45					
	545				
50					
	540				
55					
	535				
60					
	530				
65					
	525				
70					
	523.8				
	522.8				

CLAY, Yellowish brown to dark brown, low to medium plasticity, trace silt and fine sand, soft, moist.

CLAYEY GRAVEL, Yellowish brown, gravel is rounded, up to 3 inch diameter, some clay, trace silt, loose, wet.

SHALE, Dark gray, pale brown near top, trace calcite veins, thinly bedded, fine grained, broken pieces of rock, moderately weathered.

NO RECOVERY (70 ft to 71 ft)

Bottom of borehole at 71.0 feet.

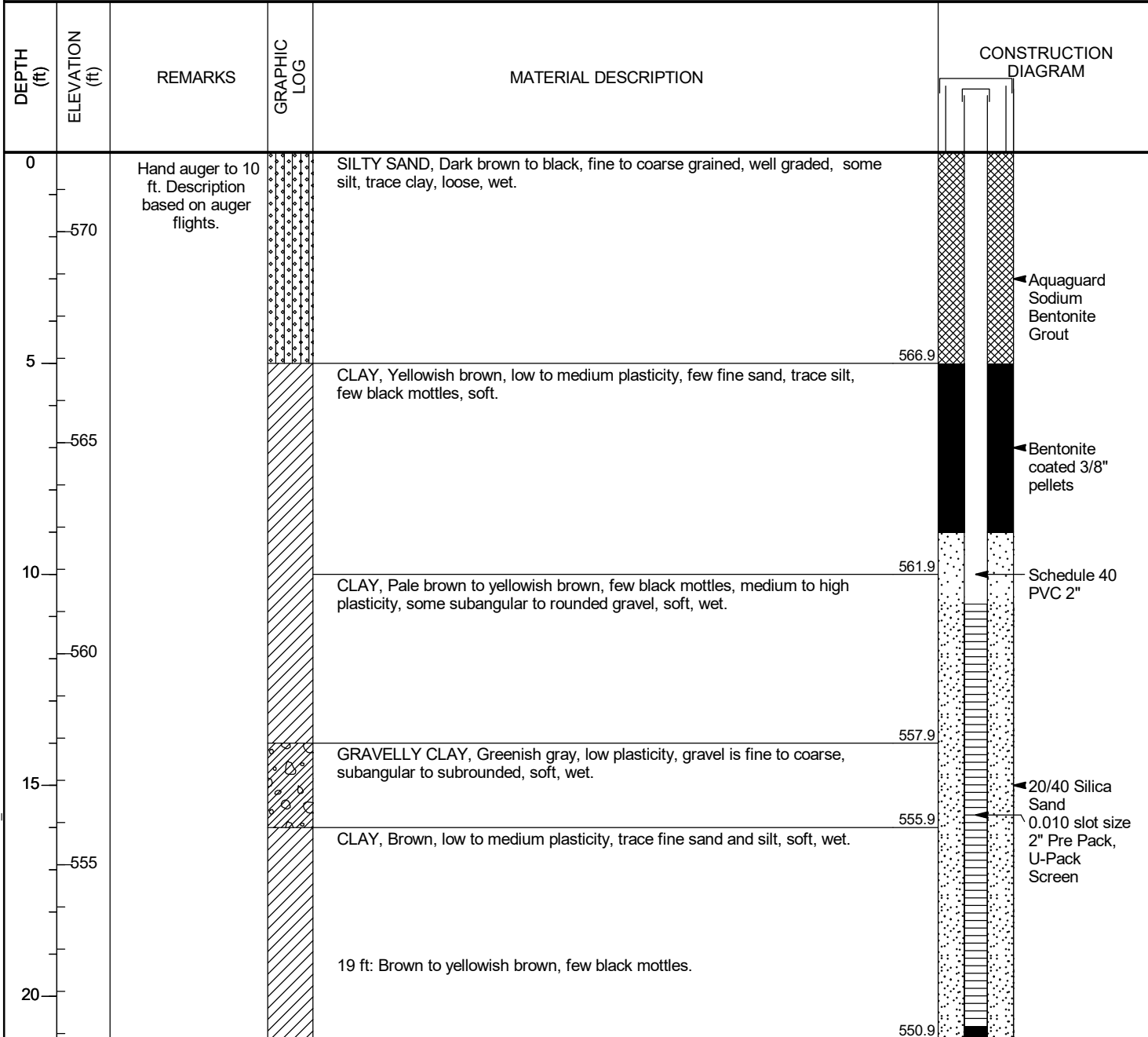
Aquaguard Sodium Bentonite Grout

Bentonite coated 3/8" pellets

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

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

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/13/20</u> COMPLETED <u>5/13/20</u>	NORTHING <u>1547905.33 ft</u> EASTING <u>1938417.82 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>571.88 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>574.40 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>

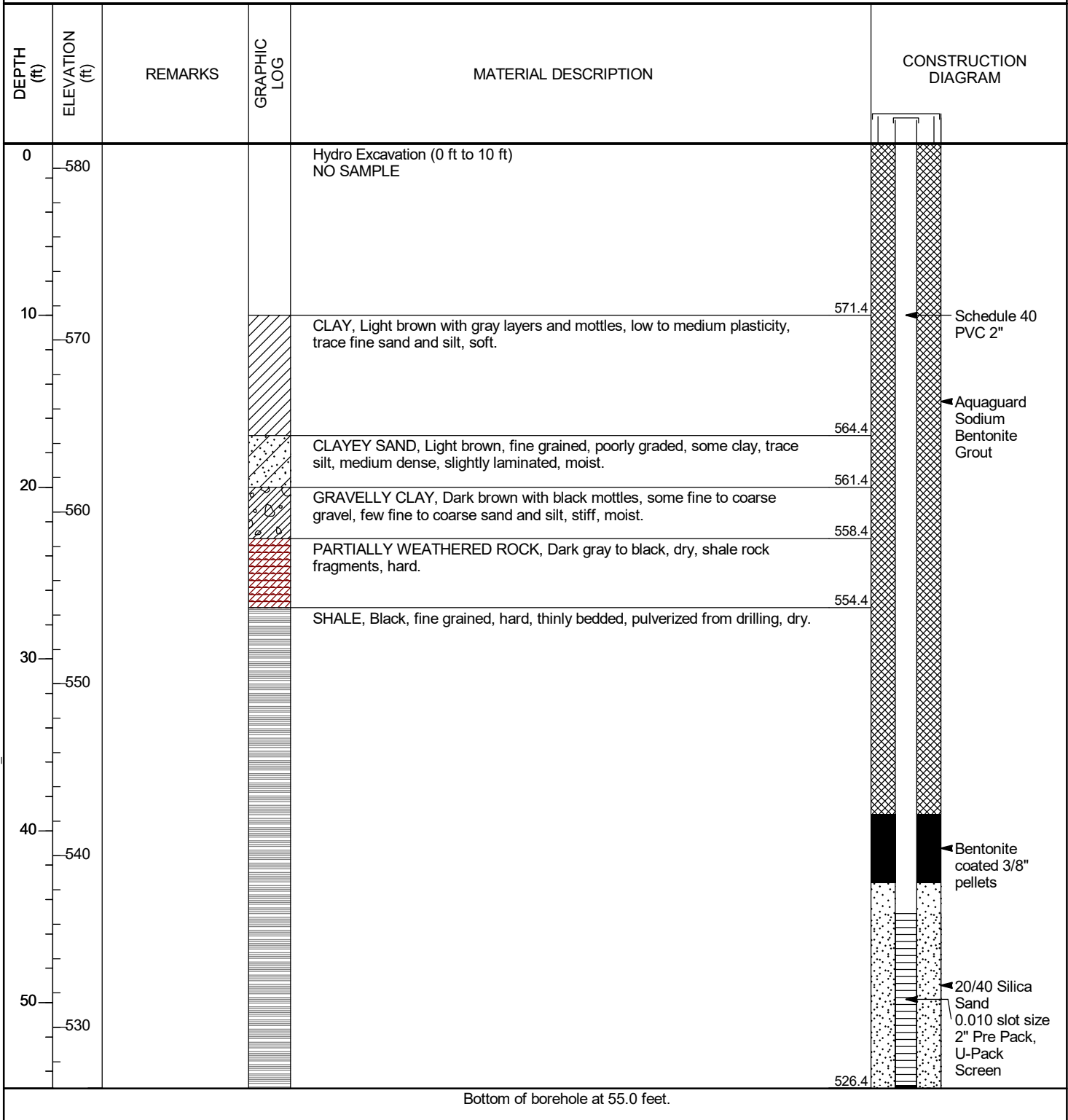


Bottom of borehole at 21.0 feet.

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




CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/7/20</u> COMPLETED <u>5/7/20</u>	NORTHING <u>1548435.43 ft</u> EASTING <u>1937538.19 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>581.44 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>584.10 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>

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



CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/8/20</u> COMPLETED <u>5/8/20</u>	NORTHING <u>1548803.01 ft</u> EASTING <u>1937551.05 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>580.95 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>583.58 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>

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


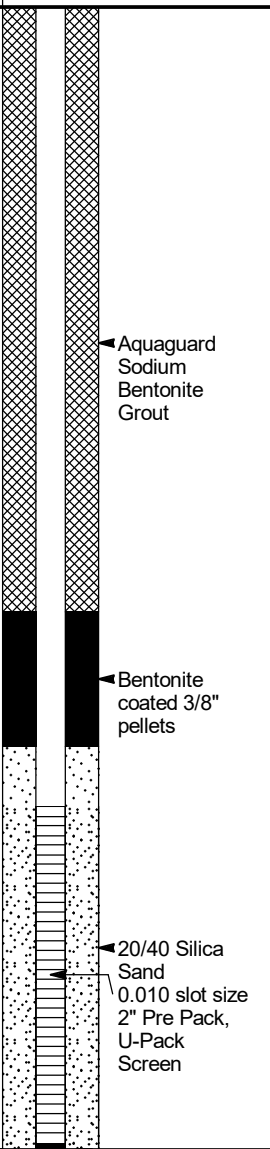
DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	580	No water added during drilling.		Hydro Excavation (0 ft to 10 ft) NO SAMPLE	
5	575				
10	570			GRAVELLY SAND, Yellowish brown, fine to coarse grained, well graded, some subangular to rounded gravel, loose, wet to moist.	571.0 ← Schedule 40 PVC 2"
15	565				
20	560			PARTIALLY WEATHERED ROCK, Black, thinly bedded, fine grained, shale rock fragments, hard.	563.0 ← Aquaguard Sodium Bentonite Grout
25	555			SHALE, Black, fine grained, thinly bedded, weathered, pulverized from drilling, hard, wet to moist.	
30	550			30 ft: Moist due to drilling potentially evaporate moisture.	
35	545				

CLIENT Southern Company Services

PROJECT NAME Plant Hammond Well Installation

PROJECT NUMBER GW6581B

PROJECT LOCATION Plant Hammond

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40 45 50 55 60 65 70	540 535 530 525 520 515 510			SHALE, Black, fine grained, thinly bedded, weathered, pulverized from drilling, hard, wet to moist. (continued)	 <p> Aquaguard Sodium Bentonite Grout Bentonite coated 3/8" pellets 20/40 Silica Sand 0.010 slot size 2" Pre Pack, U-Pack Screen </p>

Bottom of borehole at 74.0 feet.

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

APPENDIX C

Well Development Forms

WELL DEVELOPMENT LOG SHEET

Client: Go Power
 Site: Plant House
 Well ID: MW-71D
 Total Depth (ft) (after purge): 71'
 Depth to Water (ft): 20.89
 Well Diameter (in): 2"
 Well Volume (gal) = 0.041d²h
 Well Volume (L) = gal * 3.785:

Project No: 60658117
 Location: APA
 Pump Type/Model: Mansson
 Tubing Material: Poly Poly
 Pump Intake Depth (ft): 61-71'
 Start/Stop Purge Time: 3:37
 Purge Rate (mL/min): ~1L/min
 Total Purge Volume (L):

Development Date: 5/21/20
 Field Personnel Name: Ben Weinman

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

Temp's not accurate due to sun light on the cap

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.)
1355	7.43	2.15	111.1	4.81	27.2	26.4		~1.5L/min	29	
1400	7.35	2.28	102.8	4.89	26.3	40.0		~1.5L/min	35	
1405	7.46	2.31	102.3	4.44	26.78	23.7		"	42	<u>Discolored</u>
1425	7.65	2.34	105.5	2.07	25.7	59.8		"	51	
1428	7.55	2.33	102.8	4.95	27.36	40.1		"	54	
1435	7.36	2.42	102.5	2.82	27.39	21.6		"	74	
1442	7.34	2.47	102.5	5.69	27.27	12.7		"	105	<u>Sunset</u>
1500	7.6	2.37	104.2	3.05	28.30	101.8		"	140	
1515	7.64	2.40	104.0	4.50	23.84	46.6		"	154	
1521	7.64	2.41	105.0	9.45	23.53	16.4		"	168	
1528	7.40	2.44	104.4	1.89	22.79	18.00		"	175	
1531	7.50	2.43	105.0	9.60	22.59	7.37		"	182	
1535	7.58	2.42	104.3	3.33	22.19	5.62		"	188	
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

Client: Ga Power
 Site: Plant Hammond
 Well ID: MW-35
 Total Depth (ft) (after purge): 21'
 Depth to Water (ft): 7.65
 Well Diameter (in): 2"
 Well Volume (gal) = 0.041d₂h
 Well Volume (L) = gal * 3.785:

Project No: GW65817
 Location: A2-2 (Ga Power River)
 Pump Type/Model: MackSerra
 Tubing Material: Poly
 Pump Intake Depth (ft): 15'
 Start/Stop Purge Time: 1100 - 1425
 Purge Rate (mL/min): 1.1L/min
 Total Purge Volume (L): 96.5L

Development Date: 7/2/20
 Field Personnel Name: Ben Weinmann

Stopped at 1207 at
 ~18.5' DTW to recharge
 1228 began pumping again,
 surged as well (11' DTW)

* Stable (22) draw down at
 11.7'
 * Well is slowly drawing down
 faster than the recharge rate
 Stopped at 1305 to recharge
 1334 after taking break
 (328 resumed) pumping
 1400 at 10' DTW

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

Well Type: Flush Stuck Up
 Well Lock: Yes No
 Well Cap Condition: Good Replace
 Well Tag Present: Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1134	7.19	2.19	128.8	5.42	21.82	122	16.21	1.1L/min	18L	
1153	6.75	2.56	109.5	3.03	22.04	61.9	17.08	~0.5mL/min	30L	
1248	5.69	2.62	102.4	2.19	22.98	110	18.33		44	
1302	5.94	2.68	103.9	2.29	22.03	19.5	18.75'	~1.1L/min	60	Surged after recharge
1352	5.70	2.60	105.1	3.81	22.09	104	16.90	~0.5L/min	78	
1403	5.68	2.73	104.1	2.84	21.04	73.2	15.512.52	0.54L/min	84	
1412	5.75	2.73	109.0	3.10	20.84	10.38	17.69'	0.7L/min	91	
1416	5.64	2.72	107.5	3.40	19.98	7.99	17.70	"	93	
1420	5.68	2.79	107.8	3.78	20.02	8.31	17.71'	"	95	
1422	5.64	2.75	107.8	6.14	19.82	7.24	17.71'	"	96	
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

Client: <u>Go Power</u>	Project No: <u>GW65417</u>	Development Date: <u>5/10/12</u>
Site: <u>Plant Humroad</u>	Location: <u>AD-2</u>	Field Personnel Name: <u>Ben Weisman</u>
Well ID: <u>KW-368</u>	Pump Type/Model: <u>Monsoon</u>	
Total Depth (ft) (after purge): <u>55'</u>	Tubing Material: <u>Pvc</u>	
Depth to Water (ft): <u>16.92</u>	Pump Intake Depth (ft): <u>45-55'</u>	
Well Diameter (in): <u>2"</u>	Start/Stop Purge Time: <u>1420</u>	
Well Volume (gal) = 0.041d ² h	Purge Rate (mL/min):	
Well Volume (L) = gal * 3.785	Total Purge Volume (L):	

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

Well Type: Flush Stick Up

Well Lock: Yes No

Well Cap Condition: Good Replace

Well Tag Present: Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1437	7.71	0.36	82.3	4.79	22.07	38	27.35	~ 2L/min	171	Surged
1505	7.76	0.35	82.3	2.57	21.34	42.8	39.8	"	406	
1512	7.75	0.36	78.6	2.22	19.16	20.0	39.6	"	49	
1518	7.71	0.36	74.8	8.70	19.10	9.85	38.5/47.21	"	57	
1522	7.69	0.37	73.0	7.26	19.11	7.47	45.9	"	63	
1528	7.72	0.37	71.6	5.53	19.27	7.98	47.11	"	70	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

7.6 buckets dumped
 111 = 1/3 L
 1421 = 21.4
 10 sec/inch
 6'/min → 70/hr

WELL DEVELOPMENT LOG SHEET

Client: <u>HA Power</u>	Project No: <u>GW65813</u>	Development Date: <u>5/20/20 - 5/21/20</u>
Site: <u>Plant Hummock</u>	Location: <u>AP-2</u>	Field Personnel Name: <u>Ben Weissenborn</u>
Well ID: <u>MW-37D</u>	Pump Type/Model: <u>Monsieur</u>	
Total Depth (ft) (after purge): <u>71'</u>	Tubing Material: <u>Poly</u>	
Depth to Water (ft): <u>16.93</u>	Pump Intake Depth (ft): <u>74-74'</u>	Stopped at 1247 ab - 6" - purged dry
Well Diameter (in): <u>2"</u>	Start/Stop Purge Time: <u>1225 - 1242</u>	
Well Volume (gal) = 0.041d ² h:	Purge Rate (mL/min): <u>1 L/min</u>	
Well Volume (L) = gal * 3.785	Total Purge Volume (L):	Returned to finish 5/26/20
<i>d = well diameter (inches); h = length of water column (feet)</i>		
Well Type: Flush <u>Stick Up</u>	Pumping fairly clear ~30 NTU but running at 6 min. will return later (5/26/20) as per Joe's recommendation	
Well Lock: <u>Yes</u> No		
Well Cap Condition: <u>Good</u> Replace		
Well Tag Present: <u>Yes</u> No		

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoe)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
12:05								~1 L/min		Start
1242	7.51	1.39	119.7	3.04	21.56	77.0		~1 L/min	~29L	
1251	7.56	1.16	110.0	9.51	24.36	50.2			35L	
1512	6.37	1.24	120.5	1.51	23.42	47.6		~1 L/min	7L	
1517	6.80	1.25	115.3	2.06	21.85	22.8	38.12	"	12L	
1533	7.46	1.27	102.6	1.91	21.99	33.0			22L	
1548	7.56	1.27	98.3	2.05	21.4	32.0			46L	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

5/21/20
↓
5/24/20

HHH / 10/1
5/26/20

$24 - 16.9 = 52.1 \rightarrow 0.041 \times 52.1^2 \times 52.1 = 9 \text{ gallons}$

12:23 = 37.6
12:25 = 37.5
~1"/2 min = ~24"/hour

Joe suggested I surge and pump if dry

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-4	1549930.4460	1939385.4530	587.60	1549930.1010	1939384.1150	584.94
HGWA-5	1548633.3280	1937184.1740	583.24	1548632.7560	1937183.9790	580.52
HGWA-6	1548636.3450	1937177.7340	583.38	1548635.7150	1937177.4940	580.72
HGWC-14	1547998.9580	1938406.2650	597.25	1548000.4050	1938406.0400	594.67
HGWC-15	1547875.3310	1937854.9180	581.49	1547875.9530	1937855.0570	578.73
HGWC-16	1548209.8320	1937540.3280	580.02	1548209.5630	1937542.0880	577.36
HGWC-17	1548449.7060	1937538.9820	584.30	1548449.7130	1937540.5800	581.51
HGWC-18	1548821.2690	1937558.3190	584.18	1548820.7070	1937559.7460	581.36
MW-8	1548171.8630	1940016.6970	586.93	1548173.5170	1940017.0010	584.25
MW-9	1548131.3770	1938922.1610	590.95	1548132.6520	1938921.3810	588.42
MW-12	1547853.7790	1937525.4620	583.27	1547855.2080	1937525.2430	580.59
MW-16	1549104.1670	1937940.0630	574.22	1549104.2520	1937941.6720	571.70
MW-17	1549163.2760	1938345.8090	586.78	1549162.9630	1938344.3860	583.68
MW-18	1548984.1500	1938712.7270	592.28	1548984.1170	1938714.2680	589.75
MW-21D	1548814.8630	1937555.7770	583.84	1548814.5470	1937556.9520	581.16
MW-22	1547854.6800	1937832.0390	578.51	1547855.5540	1937832.1580	576.05
MW-23D	1547876.5450	1937843.8850	581.30	1547877.3670	1937844.2650	579.06
MW-33	1547973.4950	1938412.1340	593.92	1547975.0370	1938411.7580	591.19
MW-34D	1547996.8180	1938392.1960	596.51	1547998.0080	1938391.8470	593.83
MW-35	1547905.3270	1938417.8160	574.40	1547905.2250	1938418.8100	571.88
MW-36D	1548435.4290	1937538.1940	584.10	1548435.4660	1937539.6020	581.44
MW-37D	1548803.0050	1937551.0460	583.58	1548802.5500	1937552.1600	580.95

Benchmark	Northing	Easting	Elevation
BM H-2	1548149.4490	1938960.2220	590.68

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING. DATE OF FIELD SURVEY & INSPECTION: 05/11/2020-05/14/2020
FIELD SURVEY POSITIONAL TOLERANCE=0.5 FEET HORIZONTAL-NAVD'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-2 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL



[Handwritten signature]

5/19/2020

APPENDIX B

Well Design, Installation, and Development
Report – Addendum No 3, Plant Hammond
Ash Pond 2 (AP-2), November 2020

Prepared for

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

WELL DESIGN, INSTALLATION, AND DEVELOPMENT REPORT - ADDENDUM

No. 3

**PLANT HAMMOND ASH POND 2
(AP-2)**

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 No. 3**

Plant Hammond

Ash Pond 2

November 5, 2020

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

Whitney Law, P.E.

Project Manager

Geosyntec Consultants

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	DRILLING AND WELL INSTALLATION.....	2
2.1	Drilling Method	2
2.2	Screened Interval	2
2.3	Well Casings and Screens.....	2
2.4	Well Intake Design	3
2.5	Filter Pack.....	3
2.6	Annular Seal	4
2.7	Cap and Protective Casing.....	4
3.	WELL DEVELOPMENT.....	5
4.	SURVEY	6
5.	REFERENCES	7

LIST OF TABLES

Table 1	Summary of Well Construction Details
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LIST OF FIGURES

Figure 1	Groundwater Monitoring Network Map
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LIST OF APPENDICES

Appendix A	Well Driller Performance Bonds
Appendix B	Boring and Well Construction Logs
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 three groundwater monitoring wells to supplement the current groundwater monitoring system at Georgia Power Company (Georgia Power) Plant Hammond (Site) Ash Pond 2 (AP-2). The report was prepared as an addendum to previously submitted well design, installation, development and decommissioning reports issued for the Site (ERM, 2017; Geosyntec, 2019b, and Geosyntec, 2020), 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-2 includes 14 wells associated with the CCR compliance monitoring well network and a network of secondary groundwater monitoring wells and piezometers. The locations of these wells and piezometers are shown on **Figure 1**.

2. DRILLING AND WELL INSTALLATION

Well installation and development activities were performed according to accepted industry standards and following guidelines within the *Manual for Groundwater Monitoring* (GA EPD, 1991). Well drilling, installation, and surface completion activities were performed by Cascade Drilling, Inc of Midland, North Carolina under contact with, and the supervision of, Southern Company Services (SCS) Civil Field Services (CFS) personnel. In accordance with the Georgia Water Well Standards Act, the driller was required to have an insurance bond on file with the State of Georgia at the time of drilling. A copy of this bond is provided in **Appendix A**. A 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 of AP-2 area wells HGWA-42D, HGWA-43D, and HGWA-44D. 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. The three new wells at AP-2 are screened from approximately 544 to 482 feet (referenced to the North American Vertical Datum of 1988). All wells are constructed with 10 feet of well screen.

2.3 Well Casings and Screens

The wells were constructed of 2-inch inner diameter Schedule 40 polyvinyl chloride (PVC) casing with flush-threaded fittings. Each well was installed with a 10-foot nominal

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

2.4 Well Intake Design

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

2.5 Filter Pack

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

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

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

2.6 Annular Seal

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

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

2.7 Cap and Protective Casing

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

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

3. WELL DEVELOPMENT

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

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

4. SURVEY

Upon completion of the well installation, the horizontal locations and vertical elevations were surveyed by a Georgia-licensed surveyor. The top of the PVC well casing [top of casing (TOC) elevation] and the survey pin installed at each well pad were surveyed to within 0.5-foot horizontal accuracy and to 0.01-foot vertical accuracy. The horizontal location (i.e., northings and eastings) was recorded in feet relative to the North America Datum of 1983 (NAD) with the vertical elevation recorded in feet relative to the North American Vertical Datum of 1988. Certified survey data are provided in the well construction table (**Table 1**). A copy of the certified well survey data for the new AP-2 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.
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- United States Environmental Protection Agency. 2015a. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER]. RIN-2050-AE81, April 2015

TABLE

Table 1
 Summary of Well Construction Details
 Plant Hammond AP-2, 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-42D	Background	8/27/2020	1549363.72	1938443.86	583.39	586.17	528.39	518.39	65.25
HGWA-43D	Background	8/26/2020	1550422.85	1940753.80	592.08	595.08	544.08	534.08	58.25
HGWA-44D	Background	8/25/2020	1550409.13	1940756.18	592.01	594.79	491.76	481.76	110.50

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.

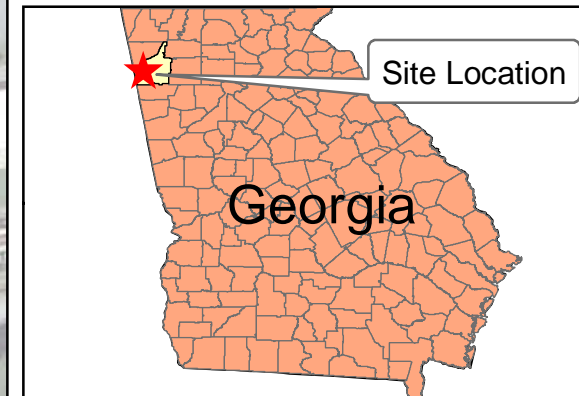
FIGURE

\\arc-01\proj1\GA Power\Plant Hammond\GIS\mxd\Hammond\2020\Well Installation Reports\2020.06_AP1\AP2\AP3\Figure 1_GW Monitoring Network_AP2.mxd 9/18/2020 4:20:32 PM



LEGEND

-  Compliance Monitoring Well
-  Horizontal Delineation Monitoring Well
-  Vertical Delineation Monitoring Well
-  Piezometer



Notes:

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



SCALE IN FEET

GROUNDWATER MONITORING NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-2
ROME, 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

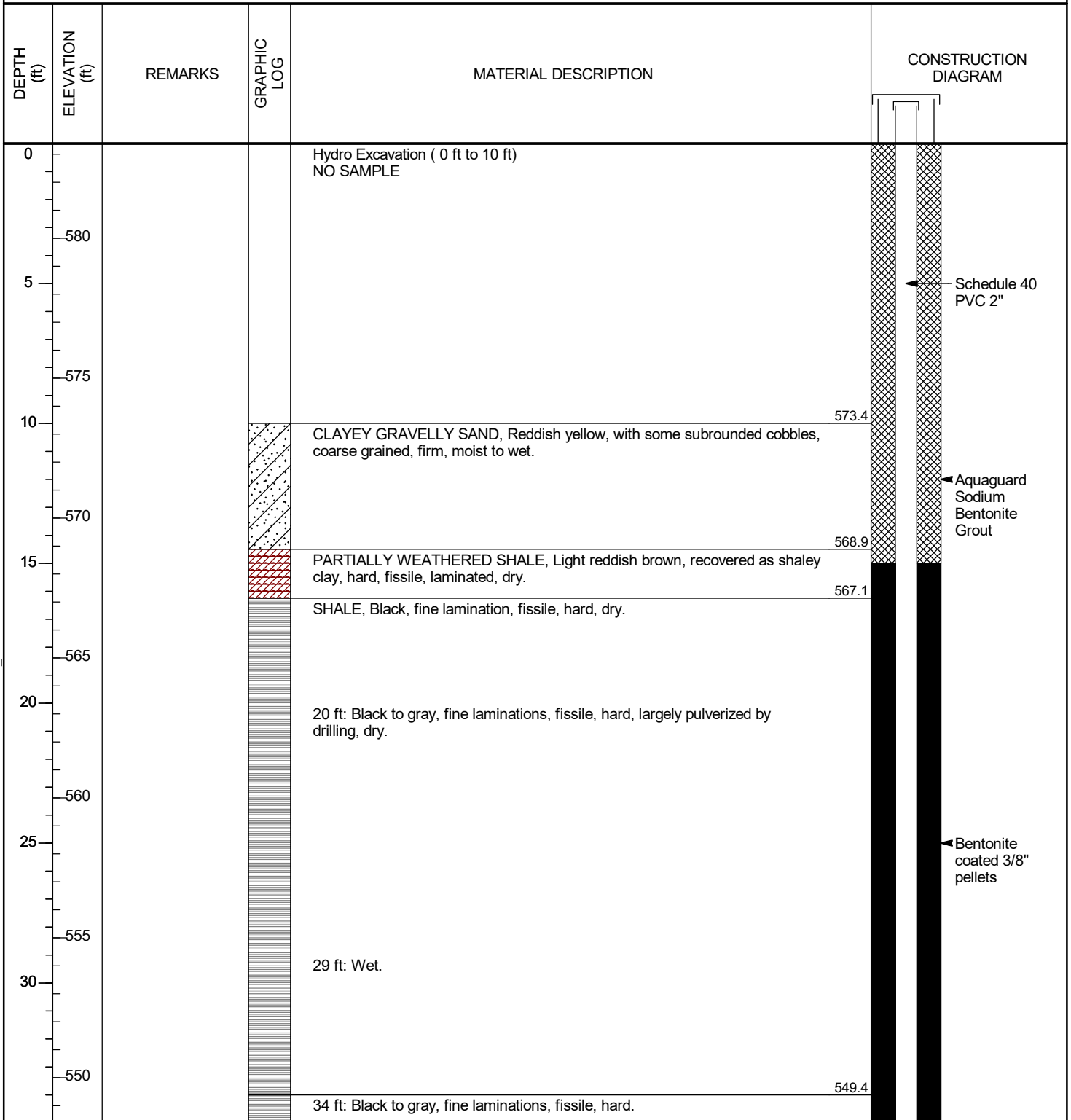
Telephone Number of Agent

APPENDIX B

Boring and Well Construction Logs

CLIENT <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>8/26/20</u> COMPLETED <u>8/27/20</u>	NORTHING <u>1549363.72 ft</u> EASTING <u>1938443.86 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>583.39 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>586.17 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

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
35				34 ft: Black to gray, fine laminations, fissile, hard. <i>(continued)</i>	
	545				
40		Water utilized during drilling likely resulted in washing away pulverized shale material.		40 ft: No recovery.	543.4
	540				
45					
	535				
50				SHALE, Black to gray, fine lamination, fissile, hard, dry.	533.4
	530				
55					
	525				
60				60 ft: Clayey, medium plasticity, hard, wet.	
	520				
65				63 ft: Black, dry, hard, thin bedding, fissile.	
					518.1

Bottom of borehole at 65.3 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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

← Bentonite coated 3/8" pellets

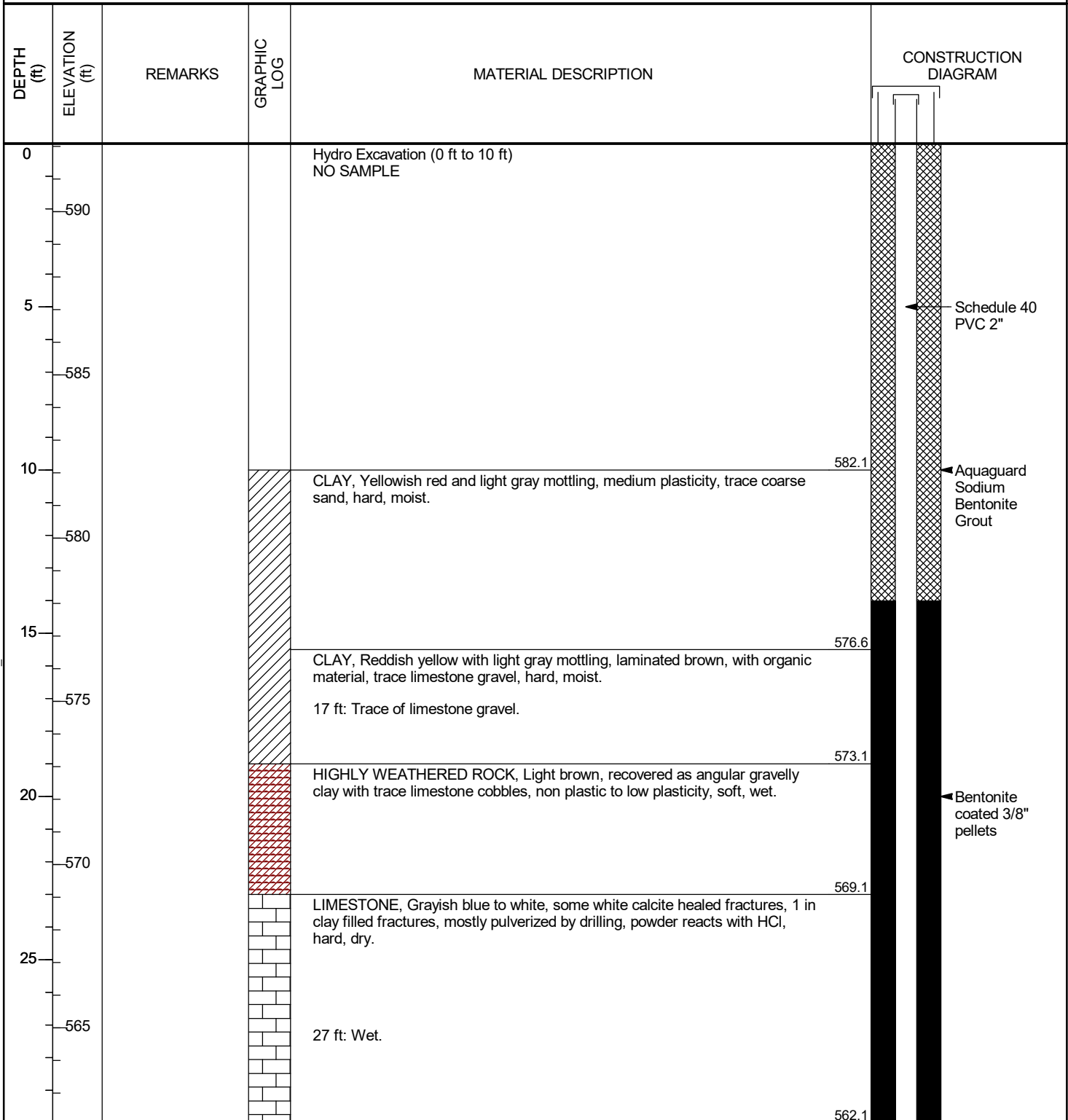
← 20/40 Silica Sand

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

Bottom of well: 65.25 ft

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>8/26/20</u> COMPLETED <u>8/26/20</u>	NORTHING <u>1550422.85 ft</u> EASTING <u>1940753.80 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>592.08 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>595.08 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

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
30	560	30 ft to 50 ft: No voids reported.		30 ft to 34.5 ft: No recovery.	
35	555		[Brick pattern graphic log]	LIMESTONE, Grayish blue to white, hard, dry, some white calcite healed fractures, 1 in clay filled fractures, 38 ft to 39 ft pulverized by drilling, powder reacts with HCl, wet.	557.6
40	550			40 ft: Up to 1 in thick calcite healed fractures.	548.1
45	545			44 ft to 50 ft: No recovery.	542.1
50	540		[Brick pattern graphic log]	LIMESTONE, Grayish blue to white, hard, dry, up to 1 in thick calcite healed fractures, trace 1 in clay filled fractures, mostly pulverized by drilling, powder reacts with HCl.	542.1
55	535				533.8

← Bentonite coated 3/8" pellets

← 20/40 Silica Sand

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

Bottom of well: 58.25 ft

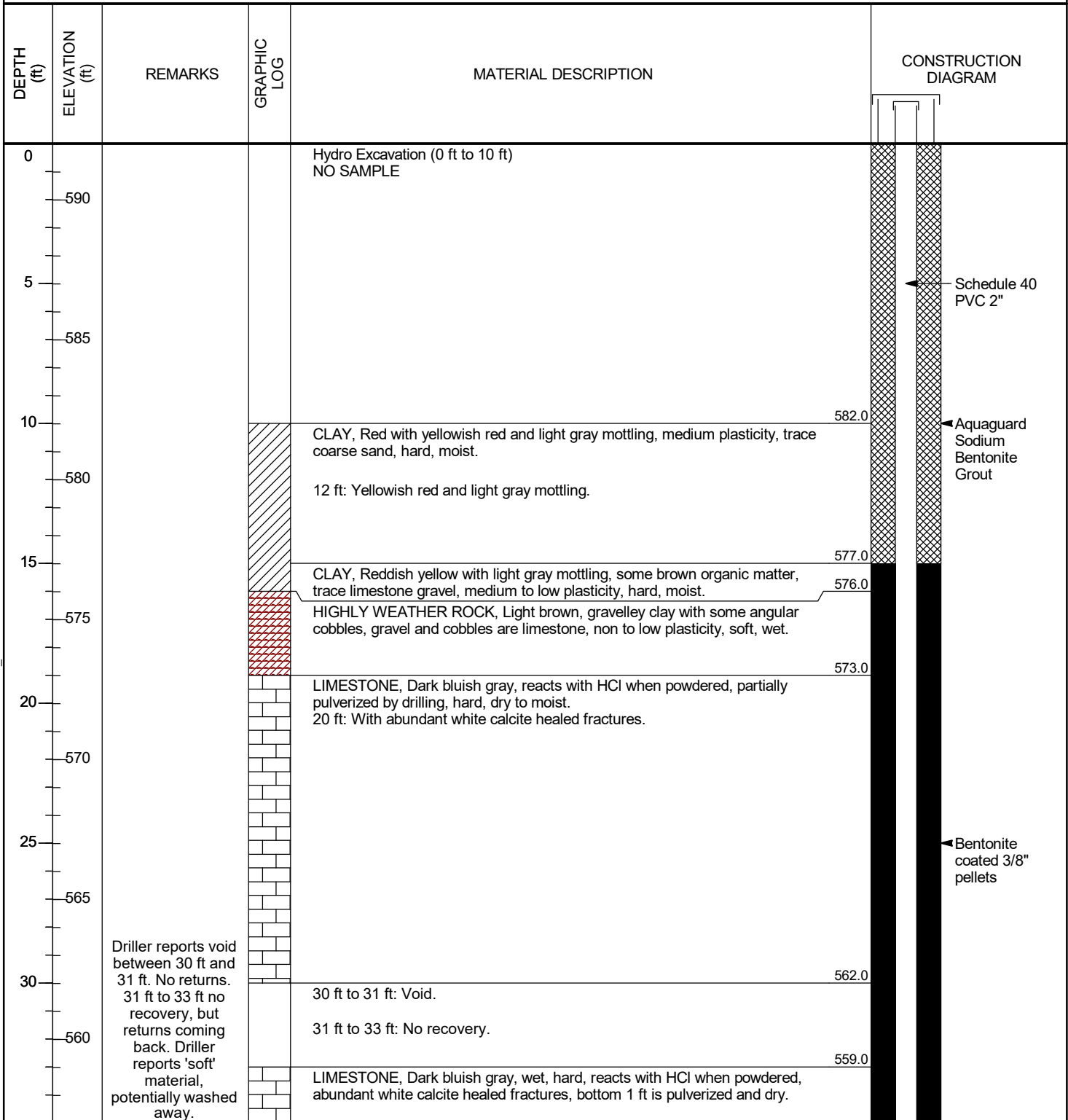
Bottom of borehole at 58.3 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>8/24/20</u> COMPLETED <u>8/25/20</u>	NORTHING <u>1550409.13 ft</u> EASTING <u>1940756.18 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>592.01 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>594.79 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	555	40 ft: Driller reports no returns.		LIMESTONE, Dark bluish gray, wet, hard, reacts with HCl when powdered, abundant white calcite healed fractures, bottom 1 ft is pulverized and dry. (continued)	
40	552.0			40 ft to 42 ft: No recovery.	
	550.0			LIMESTONE, Dark bluish gray, wet, hard, reacts with HCl when powdered, abundant white calcite healed fractures, bottom 1 ft is pulverized by drilling.	
45	545				
	542.0			50 ft to 52 ft: No recovery.	
50	540			LIMESTONE, Dark bluish gray, wet, hard, reacts with HCl when powdered, abundant white calcite healed fractures, bottom 1 ft is pulverized by drilling.	
55	535				
	532.0			60 ft to 61 ft: No recovery.	
60	531.0			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white 0.1 in to 2 in thick calcite healed fractures.	
65	525				
	522.0			70 ft to 71 ft: No recovery.	
70	521.0			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white hite 0.1 in to 2 in thick calcite healed fractures.	
	520				

← Bentonite coated 3/8" pellets

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 GLOB 9/23/20

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
75	515			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white hite 0.1 in to 2 in thick calcite healed fractures. <i>(continued)</i>	<p>← Bentonite coated 3/8" pellets</p> <p>← 20/40 Silica Sand</p> <p>← 0.010 slot size 2" Pre Pack, U-Pack Screen</p> <p>Bottom of well: 110.5 ft</p>
80	510			80 ft to 84 ft: No recovery.	
85	505			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white 0.1 in to 2 in thick calcite healed fractures.	
90	500			90 ft to 94 ft: No recovery.	
95	495			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white 0.1 in to 2 in thick calcite healed fractures.	
100	490			100 ft to 102 ft: No recovery.	
105	485			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white 0.1 in to 2 in thick calcite healed fractures.	
110	480.0				

Bottom of borehole at 112.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

APPENDIX C

Well Development Forms

Client: SCS/Georgia Power Company

Project No.: GW6581B

Development Date: 8/30/20

Site: Plant Hammond

Location: Gate 2

Field Personnel Name: A. Ramsey

Well ID: ~~#~~ HW-42 HGWA-42D

Pump Type/Model: Mega Monsoon

Total Depth (ft) (after purge): 68.03 ft bTOC

Tubing Material: High Density Polyethylene (HDPE)

Depth to Water (ft): 18.76 ft btoc

Pump Intake Depth (ft): 64 ft btoc

Well Diameter (in): 2 in

Start/Stop Purge Time: 1450/1527

Well Volume (gal) = $0.041d^2h$: 7.40 gal

Purge Rate (mL/min): 568 mL/min

Well Volume (L) = gal * 3.785: 29.14 L

Total Purge Volume (L): 21 L

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

Well Type: Flush Stick Up

Well Lock: Yes No

Well Cap Condition: Good Replace

Well Tag Present: Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1457	7.61	5.5	53.5	—	27.7	36.8	22.58	1000	7	
1527	7.05	268.0	19.4	—	21.8	9.03	4 35.15	467	(14) 21	HR
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

DO probe failure

WELL DEVELOPMENT LOG SHEET

Client: SCS/Georgia Power Company

Project No.: GW6581B

Development Date: 8/30/20

Site: Plant Hammond

Location: 59 ft btoc

Field Personnel Name: A. Ramsey

Well ID: AR MW-43D HGWA-43D

Pump Type/Model: Mega Monsoon

Total Depth (ft) (after purge): 61.25 ft btoc **K**

Tubing Material: High Density Polyethylene (HDPE)

Depth to Water (ft): 18.67 ft btoc

Pump Intake Depth (ft): N of AP-1 outside gate

Well Diameter (in): 2 in

Start/Stop Purge Time: 0900/1100, 1555/

Well Volume (gal) = 0.041 d₂h: 7.02 gal

Purge Rate (mL/min): 400 mL/min

Well Volume (L) = gal * 3.785: 26.57 L

Total Purge Volume (L): 75.5 L

3* 14L purge until
1050 @ 350 mL/min
avg. allowed to
recharge. pump
2 ft abt bottom.

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

Well Type: Flush Sock Up

1* 28 Ltr purged from 9000-9020 @ 1.4 L/min
to remove basal accumulations. well nearing
purge dry and allowed to recharge

4* resume @ 1050

Well Lock: Yes No

Well Cap Condition: Good Replace

Well Tag Present: Yes No

2* resume at 0930, recharge water is white

5* small PVC shreds
clogging pump. clean
2000 out and return to
36 L 43D at later time

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.)
1610	7.09	374.5	61.1	-	19.6	Overrange	28.27	400	(455.6) 31.5	
1640	7.04	370.5	56.5	-	19.2	22.4	40.80	400	(12) 63.5	
1655	7.06	378.5	60.2	-	19.9	15.2	48.92	400	(6) 69.5	
1810	7.09	384.4	58.6	-	20.5	7.93	52.46	400	(6) 75.5	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

DO probe failure

AR

WELL DEVELOPMENT LOG SHEET

Client: SCS/Georgia Power Company

Project No.: GW6581B

Development Date: 8/28/20

Site: Plant Hammond

Location: north of AP-1

Field Personnel Name: A. Ramsey

Well ID: ~~HPM-44D~~ HGWA-44D

Pump Type/Model: Mega Monsoon

Total Depth (ft) (after purge): 113.25 ft btoc

Tubing Material: High Density Polyethylene (HDPE)

Depth to Water (ft): 18.95 ft btoc

Pump Intake Depth (ft): 112

Well Diameter (in): 2

Start/Stop Purge Time: 1345 | 1732

Well Volume (gal) = 0.041d²h: 15.01 gal

Purge Rate (mL/min): ~~300~~ 1000

Well Volume (L) = gal * 3.785: 57.11 L

Total Purge Volume (L): 167

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

Well Type: Flush Stick Up

* purgl stopped at 1525 due to pump failure. 1602 purge resumed.

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.)
1404	7.55	236.0	-5.8	0.17	20.1	51.7	81.27	5000	95	
1434	7.11	247.7	-53.5	0.16	21.5	51.9	99.30	1000	(50) 125	
1504	7.48	387.7	-149.5	0.21	22.9	31.6	100.17	300	(9) 134	
1602	7.46	400.5	-133.5	0.21	20.6	50.7	95.16	300	(6) 140	
1632	7.47	415.0	-182.1	0.00	22.4	21.7	99.98	300	(9) 149	
1702	7.52	422.1	-186.4	0.00	23.3	14.4	102.90	300	(9) 158	
1732	7.57	419.7	-196.2	0.00	22.9	8.32	102.92	300	(9) 167	
total										
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

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



[Handwritten signature in blue ink]

9/10/2020

APPENDIX C

Well Inspection Forms

Groundwater Monitoring Well Integrity Form

Site Name AP-2
 Permit Number _____
 Well ID MW-33
 Date, field conditions 01/22/20, Sunny ~ 35°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input 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 Piant Hammond
 Permit Number _____
 Well ID HGW A-1
 Date, field conditions 3-2-2020 Rain wet conditions

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 Hammond AP-1/2
 Permit Number _____
 Well ID 11GWA-2
 Date, field conditions 3/2/2020; 47°F; raining

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

Permit Number

Well ID

HGWA-3

Date, field conditions

3/2/2020; 54°F; raining

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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
 Permit Number _____
 Well ID HGVA-4
 Date, field conditions 3-2-2020 Wet

	yes	no	n/a
1 Location/Identification			
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" 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"/>
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"/>
2 Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" 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"/>
e	Is the well locked and is the lock in good condition?	<input checked="" 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"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" 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"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<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"/>
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"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<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"/>
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"/>
5 Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	<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"/>
c	Does the well require redevelopment (low flow, turbid)?	<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"/>

7 Corrective actions as needed, by date:

Big Ant Pit next to Pad 3-2-2020

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Heart Home
 Permit Number _____
 Well ID 462/A-T
 Date, field conditions 7/1/20 12:30

	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 checked="" 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 Hemlock
 Permit Number _____
 Well ID H6204-6
 Date, field conditions 3/2/10 via

	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 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 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-2
 Permit Number _____
 Well ID HGW-14
 Date, field conditions 03 02 2020 Rainy 15°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 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 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 type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input 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 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
 Permit Number _____
 Well ID HGWC-15
 Date, field conditions 03.02.2020 RAINY 15°F

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID HGWC-16
 Date, field conditions 3/3/2020 68°F raining

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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-2
 Permit Number _____
 Well ID HGWC-17
 Date, field conditions 3/3/2020 68°F; cloudy

		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
 Permit Number _____
 Well ID HGWC-18
 Date, field conditions 3.02.2020 Raining 15°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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input 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 type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input 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 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-1
 Permit Number _____
 Well ID MW-8
 Date, field conditions 03/02/2020, rainy 20°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	/	_____	_____
b Is the well properly identified with the correct well ID?	/	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	(MW) /	/	_____
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?	_____	_____	/ WL only
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	/	_____	_____
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	_____	_____	/
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	_____	_____	/
c Does the well require redevelopment (low flow, turbid)?	_____	_____	/
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	/	_____	_____
7 Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-a
 Date, field conditions 03/02/2020, rainy, 50°F

	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> WL only
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<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 Hammond AP-2
 Permit Number _____
 Well ID MW-12
 Date, field conditions 03/02/2020 rainy 50°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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>wt only</i>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Corrective actions as needed, by date:	_____		

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-16
 Date, field conditions 02/02/2020 rainy 50°F

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

wl only

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-17
 Date, field conditions 03/02/2020 rainy 50°F

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AD-2
 Permit Number _____
 Well ID MW-18
 Date, field conditions 03/02/2020 rainy 50°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	/	_____	_____
b Is the well properly identified with the correct well ID?	/	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	/	_____	_____
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	/	_____	_____
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	/	_____	_____
b Is the casing free of degradation or deterioration?	/	_____	_____
c Does the casing have a functioning weep hole?	/	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	/	_____	_____
e Is the well locked and is the lock in good condition?	/	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	/	_____	_____
b Is the well pad sloped away from the protective casing?	/	_____	_____
c Is the well pad in complete contact with the protective casing?	/	_____	_____
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	/	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	/	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	/	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	/	_____	_____
c Is the well properly vented for equilibration of air pressure?	/	_____	_____
d Is the survey point clearly marked on the inner casing?	/	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	/ WL only
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	/	_____	_____
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 Hammock AP-2
 Permit Number _____
 Well ID MW-21D
 Date, field conditions 03.02.2020 Rainy 15°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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input 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 type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input 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 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 MW-02
 Date, field conditions 3/2/00 R.S.

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID W-232
 Date, field conditions 3/2/20

	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 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 checked="" 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-2
 Permit Number _____
 Well ID MW-33
 Date, field conditions 03.02.2020 Rainy 15°F

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number _____
 Well ID HGWA-1
 Date, field conditions 3-25-2020 Wet Rain last night

		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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>

WL only

7 Corrective actions as needed, by date:
Needs Blue QED Well cap 2-inch

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-1/2
 Permit Number _____
 Well ID HGWA-2
 Date, field conditions 3/25/2016 65°F; partly cloudy

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

wl only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-1/2
 Permit Number
 Well ID HCNA-3
 Date, field conditions 3/25/2020 60-65°F; partly cloudy

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

wl only

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond, AP-2
 Permit Number _____
 Well ID HGWA-4
 Date, field conditions 3/26/22, Sunny, 57°F

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

WL only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number
 Well ID HGW/A-5
 Date, field conditions Sunny, 46°F

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

WL only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Harnick A-2
 Permit Number _____
 Well ID HW A-6
 Date, field conditions Sunny 70's 3/25/20

	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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> WL only
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> (WF 3/25/20)
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 HGWC-14
 Date, field conditions 2/30/2020, cloudy, 60°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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Corrective actions as needed, by date:			

WL only

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number _____
 Well ID HGWC-15
 Date, field conditions Sunny, 57°F

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AB-2
 Permit Number
 Well ID HGWC-16
 Date, field conditions 3/30/2020

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

Wt only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond, AP-2
 Permit Number _____
 Well ID HGW/C-17
 Date, field conditions 03/31/2020, Rainy, 54°F

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

X WL only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond, AP-2
 Permit Number _____
 Well ID HGWC-18
 Date, field conditions 3/31/2020, Cloudy, 50°F

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

WL only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-2
 Permit Number _____
 Well ID MW-8
 Date, field conditions 3-23-2020 Rain / Wet

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

WL only

7 Corrective actions as needed, by date:

None as of now

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name

AP-2

Permit Number

Well ID

MW-9

Date, field conditions

3/23/20 - Rain, 53°

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name

AP-2

Permit Number

Well ID

MW-12

Date, field conditions

3 23 20 - Rain, 53°

1 Location/Identification

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

2 Protective Casing

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

3 Surface pad

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

4 Internal casing

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

5 Sampling: Groundwater Wells Only:

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

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

- | | | | | |
|--|--|-------------------------------------|--------------------------|--------------------------|
| | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--|-------------------------------------|--------------------------|--------------------------|

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name

Hammond/AP-2

Permit Number

Well ID

MW-16

ate. field conditions

3/23/20 - Rain, SS²⁰

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name

AP-2

Permit Number

Well ID

MW-17

Date, field conditions

3/23/20 - Rain, 55°

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

AD-2

Permit Number

Well ID

MW-18

Date, field conditions

3/23/00 - Rain, 55°

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>well only</i>
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 Hannons AP-2
 Permit Number _____
 Well ID MV-210
 Date, field conditions 4-1-2020 Damp

		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?	_____	_____	✓ <i>wt only</i>
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 Plant Hammond AP-2
 Permit Number 60
 Well ID MW-22
 Date, field conditions 03/27/2020, Sunny, 60°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>WL only</i>
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 AP-2
 Permit Number
 Well ID MW-23D
 Date, field conditions 4/11/2020 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> WL only
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input 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 Plant Hammond ~~Hull~~ Ap-2
 Permit Number _____
 Well ID MW-33
 Date, field conditions 4/1/2020 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input 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"/>

wt only

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 MW-34D
 Date, field conditions 6/18/2020; 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input 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 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 MW-35
 Date, field conditions 6/18/2020 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input 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 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 MW-360
 Date, field conditions 6/8/2020 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input 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 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 MW-37D
 Date, field conditions 6/18/2020 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input checked="" 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 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 11213
 Permit Number _____
 Well ID HGMW-1
 Date, field conditions 09-15-2020, 85°F 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 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 type="checkbox"/>	<input checked="" 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 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"/>

TIGHT. MAY NEED HAMMER TO OPEN

7 Corrective actions as needed, by date:
CHANGE COVER OF PROTECTIVE CASING (LESS TIGHT)

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name HAMMOND A1 1/2/13
 Permit Number _____
 Well ID HGWA-2
 Date, field conditions 09-15-20, 80F 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 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-1/2-13
 Permit Number _____
 Well ID HGWA-3
 Date, field conditions 9/15/2020 cloudy

		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 APZ
 Permit Number _____
 Well ID 116W2-4
 Date, field conditions overcast, 80° 9/15/20

	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 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 Hammond APZ
 Permit Number _____
 Well ID HGW-5
 Date, field conditions 9/15/10, overcast 80°F

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

7 Corrective actions as needed, by date:

n/a

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond APZ
 Permit Number _____
 Well ID HGWA-6
 Date, field conditions 9/15/20 Overcast 60"

	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 Hammond AP-2
 Permit Number _____
 Well ID PGW-H2D HGW.A-42D
 Date, field conditions 7/16/2020

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

being corrected

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-12/3
 Permit Number _____
 Well ID MW-43D HGW.A-43D
 Date, field conditions 7/16/2020 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> <i>correcting this event</i>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?				
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-1/2/3
 Permit Number _____
 Well ID 445-44D HGL-24-44D
 Date, field conditions 9/16/20 sampling

	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?		✓	being fixed
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 APZ
 Permit Number _____
 Well ID HGMG-14
 Date, field conditions 75°F, CLOUDY, WINDY

	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"/>
SLIGHT EROSION AROUND PAD GRAVEL ON B AROUND			
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 A12-2
 Permit Number _____
 Well ID HGWL-15
 Date, field conditions 8:25 P.M. 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 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-2
 Permit Number _____
 Well ID HGWL-16
 Date, field conditions 7/27/07, 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 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 AD 2
 Permit Number _____
 Well ID HGW/C-17
 Date, field conditions 8/7, 2014

	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 APZ
 Permit Number _____
 Well ID HG60C-18
 Date, field conditions 9/15/20 Overcast, 80°

	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 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/c

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2 AP-1/AP-2
 Permit Number _____
 Well ID MW-2
 Date, field conditions 9/14/2020 8:00P SUNDAY

		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 Hummered AP-2
 Permit Number _____
 Well ID MU-9
 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 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 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 type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input 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 type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input 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 type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input 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 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

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-16
 Date, field conditions 9/15 Sunday WFCM

	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 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
 Permit Number _____
 Well ID mes-17
 Date, field conditions 9/14

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-18
 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 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 AP2
 Permit Number _____
 Well ID MW-210
 Date, field conditions 55°F, Sunny 9-21-2

	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>DEBRIS ON PAD</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 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
 Permit Number _____
 Well ID MW-22
 Date, field conditions 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 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"/>

FOR PURGE RATE OF 100 ML/MIN.

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
 Permit Number _____
 Well ID MW-23D
 Date, field conditions 11/7/2010 7:00 PM 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 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-2
Permit Number
Well ID MW-33
Date, field conditions 70°F, SUNNY, 9-21-20

- 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?
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?
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?
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:

Table with 3 columns: yes, no, n/a. Contains handwritten checkmarks for various items.

Signature and Seal of PE/PG responsible for inspection

Blank lines for signature and seal.



Groundwater Monitoring Well Integrity Form

Site Name: Hammond
Permit Number: _____
Well ID: MW 34D
Date, field conditions: 9/23

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-2
 Permit Number _____
 Well ID MW 35
 Date, field conditions 9/21 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 type="checkbox"/>	<input checked="" 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:				
<u>n/a</u>				

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Harmond APZ
 Permit Number _____
 Well ID MW-360
 Date, field conditions 6/5/14, Sunny

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
b	Is the well properly identified with the correct well ID?	<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"/>		

TAG PRESENT BUT NOT VISIBLE FROM
 APP

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name HANCOCK AP2
 Permit Number _____
 Well ID MW-370
 Date, field conditions 9-23-20, DRY SUNNY

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
b	Is the well properly identified with the correct well ID?	<input checked="" 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"/>	
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"/>	
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
c	Does the casing have a functioning weep hole?	<input checked="" 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"/>	
e	Is the well locked and is the lock in good condition?	<input checked="" 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"/>	
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
c	Is the well pad in complete contact with the protective casing?	<input checked="" 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"/>	
e	Is the pad surface clean (not covered with sediment or debris)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" 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"/>	
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
d	Is the survey point clearly marked on the inner casing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
e	Is the depth of the well consistent with the original well log?	<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"/>	
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<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"/>	
c	Does the well require redevelopment (low flow, turbid)?	<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"/>	

TAB PRESENT BUT NOT VISIBLE FROM AREA

DEBRIS / GRASS ON PAD

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number _____
 Well ID MW-42D
 Date, field conditions 11/11/2020 Sunny

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP 1, 2, 3
 Permit Number _____
 Well ID HGW4 43D
 Date, field conditions 11/10, cloudy 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 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 Plant Hammond
 Permit Number _____
 Well ID HGLWA-44b
 Date, field conditions 11/10/2020, Cloudy

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond APZ
 Permit Number _____
 Well ID HGW4-42
 Date, field conditions 12/15 Sunny, Cold

		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 Plant Hammond AP 1/3/13
 Permit Number _____
 Well ID 116-43P
 Date, field conditions 12/15, Sunny, cold

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP 1/2/13
 Permit Number _____
 Well ID HGWA-441P
 Date, field conditions 12/15/2020 Sunny, cold

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

APPENDIX D

Semiannual Remedy Section and Design Progress Report

Prepared for

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

**SEMIANNUAL REMEDY SELECTION AND
DESIGN PROGRESS REPORT
REVISION 1
PLANT HAMMOND ASH POND 2 (AP-2)**

Prepared by

Geosyntec 
consultants

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581B

February 2021

**SEMIANNUAL REMEDY SELECTION AND DESIGN
PROGRESS REPORT (REVISION 1)**

GEORGIA POWER COMPANY - PLANT HAMMOND

ASH POND 2 (AP-2)

*This Semiannual Remedy Selection and Design Progress Report (Revision 1), Georgia Power Company - Plant Hammond, Ash Pond 2 (AP-2), has been prepared in accordance with the United States Environmental Protection Agency coal combustion residual rule, specifically 40 Code of Federal (CFR) § 257.97(a) and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10(6)(a). This report describes the progress made during the second semiannual period of 2020 in selecting and designing a remedy previously documented in the *Assessment of Corrective Measures Report – Plant Hammond Ash Pond 2 (AP-2)* (Geosyntec, 2019a).*

Report Prepared by:



Whitney B. Law, P.E.
Georgia Professional Engineer No. 036641

February 12, 2021
Date

TABLE OF CONTENTS

1.0 INTRODUCTION 1
 1.1 Purpose 1
 1.2 Site Background and Overview of AP-2 Pond Closure 3
 1.3 Regulatory Program Status and Nature and Extent 3
2.0 SUMMARY OF WORK COMPLETED 7
 2.1 Field Activities 7
 2.1.1 Installation of Deep-Screened Background Compliance Wells 7
 2.1.2 Supplemental Sampling for Geochemical Evaluation..... 7
3.0 SUMMARY OF RESULTS 9
 3.1 Refined Geochemical Evaluation 9
4.0 UPDATED CONCEPTUAL SITE MODEL..... 10
5.0 UPDATED EVALUATION OF CORRECTIVE MEASURES 11
6.0 PLANNED ACTIVITIES & ANTICIPATED SCHEDULE 13
7.0 REFERENCES 14

LIST OF TABLES

Table 1	Evaluation of Remedial Technologies
Table 2	Monitoring Well Network Summary
Table 3	Summary of Groundwater and Pore Water Analytical Data
Table 4	Proposed ACM Supplementary Data Analyses and Collection Tasks for First Semiannual Period 2021

LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Monitoring Well Network and Sampling Location Map
Figure 3	Potentiometric Surface Contour Map – September 2020
Figure 4	Iso-Concentration Map, Cobalt – September 2020
Figure 5	Piper Trilinear Plot
Figure 6A-C	Stiff Diagrams

LIST OF APPENDICES

Appendix A	Risk Evaluation Report
Appendix B	Boring and Well Construction Logs for HGWA-42D, HGWA-43D, and HGWA-44D

LIST OF ACRONYMS

ACM	Assessment of Corrective Measures
AP	ash pond
ASD	alternate source demonstration
Ca	calcium
CCR	coal combustion residuals
CFR	Code of Federal Regulations
Cl	chloride
Co	cobalt
CSM	conceptual site model
EPD	Georgia Environmental Protection Division
Fe	iron
Geosyntec	Geosyntec Consultants, Inc.
Georgia Power	Georgia Power Company
GWPS	Groundwater Protection Standard
HCO ₃	bicarbonate alkalinity
K	potassium
Mg	magnesium
mg/L	milligrams per liter
Mn	manganese
MNA	monitored natural attenuation
Mo	molybdenum
Na	sodium
PRB	permeable reactive barriers
S ²⁻	sulfide
SO ₄	sulfate
SSI	statistically significant increase
SSL	statistically significant level
US EPA	United States Environmental Protection Agency

1.0 INTRODUCTION

1.1 Purpose

This *Semiannual Remedy Selection and Design Progress Report (Revision 1)* (the semiannual progress report) was prepared for Georgia Power Company (Georgia Power) Plant Hammond Ash Pond 2 (AP-2 or Site) in accordance with the United States Environmental Protection Agency (US EPA) coal combustion residual rule (CCR Rule) (40 Code of Federal Regulations [CFR] 257 Subpart D), specifically 40 CFR 257.97(a), and the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10(6)(a). This progress report describes the progress made during the second semi-annual period of 2020 in selecting and designing a remedy previously documented in the *Assessment of Corrective Measures Report – Plant Hammond Ash Pond 2 (AP-2)* (Geosyntec, 2019a) (ACM Report).

The purpose of the ACM Report (and subsequent semiannual progress reports) is to document the process of selecting corrective measure(s) for groundwater. This process is typically iterative and may be composed of multiple steps to analyze the applicability of corrective measures to improve groundwater quality. Once potential corrective measures are identified, they are further evaluated using the criteria outlined in § 257.96(c) and Rule 391-3-4-.10(6)(a). Once selected based on these criteria, the corrective measure must meet the additional protection criteria outlined in § 257.97(b) and corresponding Rule 391-3-4-.10(6)(a). Additional details are provided within the ACM Report and the cited federal and state regulations. Pursuant to § 257.97(a) and Rule 391-3-4-.10(6)(a), semiannual progress reports have been regularly submitted to document the efforts of evaluating and progressing towards selecting a groundwater corrective measure (Geosyntec, 2019b, 2020a, 2020b).

As discussed in the ACM Report, the following corrective measures are potentially feasible for use at AP-2. A comparative screening of the corrective measures is provided in **Table 1**.

1. Geochemical Manipulation (In-Situ Injection)
2. Hydraulic Containment
3. Monitored Natural Attenuation (MNA)
4. Permeable Reactive Barrier (PRB)
5. Subsurface Vertical Barrier Walls

However, the PRB and vertical barrier wall corrective measures have since been removed from consideration based on data evaluations presented in the previous semiannual progress report (Geosyntec, 2020b).

Georgia Power proactively initiated adaptive site management as outlined in the ACM Report (Geosyntec, 2019b) to support the groundwater remedy selection process and address potential changes in site conditions as appropriate during the ash pond closure. The adaptive site management approach will take existing site conditions, including natural attenuation mechanisms into account. Characterization activities to evaluate attenuation mechanisms at the site include collection of data necessary to progressively evaluate the existing and long-term effectiveness of these processes in the aquifer and reduce uncertainty for decision making at each screening step as listed in the EPA guidelines for MNA (USEPA, 2015) summarize below.

- * Tier I : Constituent concentrations & plume stability
- * Tier II: Constituent attenuation mechanisms
- * Tier III: Aquifer capacity and stability
- * Tier IV: Performance monitoring

In addition to the assessment monitoring program at the Site, Georgia Power conducted a human health and ecological risk evaluation to evaluate constituents that exhibit statistically significant levels (SSLs) in groundwater (i.e., cobalt (Co) and molybdenum (Mo)) at AP-2. The risk evaluation used a conservative, health-protective approach that is consistent with US EPA risk assessment guidance, EPD regulations and guidance, and standard practice for risk assessment in the State of Georgia. As part of the risk evaluation, a well survey of potential groundwater wells within a three-mile radius of AP-2 was conducted and consisted of reviewing federal, state, and county records and online sources in addition to conducting a windshield survey of the area. The risk evaluation relied on groundwater data collected by Georgia Power from 2016 through June 2020 in compliance with the federal and state CCR rules. Based upon this risk evaluation, which included multiple conservative assumptions, concentrations of Co and Mo detected in groundwater at AP-2 are not expected to pose a risk to human health or the environment. The *Risk Evaluation Report – Georgia Power Company – Plant Hammond Ash Pond 2* (Geosyntec, 2021a) and associated well survey are provided as **Appendix A**.

1.2 Site Background and Overview of AP-2 Pond Closure

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 four coal-fired electric generating units at Plant Hammond were decommissioned in 2019 and electricity is no longer produced at the Site.

AP-2 is a 21-acre surface impoundment. Dewatered ash from AP-2 is excavated and transported to the nearby Huffaker Road facility, a permitted solid waste disposal location owned and operated by Georgia Power. Georgia Power will close AP-2 through removal of the CCR material from the CCR unit. The Closure Plan submitted to EPD as part of the closure permit application package describes the closure activities and requirements in accordance with § 257.102 and corresponding Rule 391-3-4-.10(7)(b). The proposed closure by removal approach provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. Details of the closure approach are provided in the Initial Written Closure Plan and published in 2016 to Georgia Power's website. Closure permit No. 057-024D(CCR) was approved by EPD on June 22, 2020.

1.3 Regulatory Program Status and Nature and Extent

CCR compliance groundwater monitoring-related activities have been performed for AP-2 since May 2016 pursuant to the CCR rule. Georgia Power initiated the assessment monitoring program in January 2018 after identifying statistically significant increases (SSIs) above background of Appendix III constituents in groundwater. Pursuant to § 257.95, samples were collected from the compliance monitoring well network, shown on **Figure 2**, and analyzed for Appendix IV parameters.

Statistical analyses of the 2018 assessment monitoring groundwater data identified SSLs of Co in compliance monitoring wells HGWC-15 and HGWC-18 (Geosyntec, 2019c). Pursuant to § 257.96, Georgia Power initiated an assessment of corrective measures (ACM) for AP-2 in January 2019. The ACM Report was subsequently prepared for AP-2 (Geosyntec, 2019a) and submitted to EPD in June 2019 and posted to the CCR compliance website in July 2019.

As part of the assessment monitoring program, eight additional groundwater monitoring wells and piezometers have been installed to provide additional data to characterize flow conditions downgradient of AP-2 (**Figure 2**; well construction details are provided in

Table 2). Three additional upgradient compliance monitoring wells (HGWA-42D, HGWA-43D, and HGWA-44D) 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 B of the *2020 Annual Groundwater Monitoring & Corrective Action Report* (Geosyntec, 2021b). The well installation report was submitted to EPD in November 2020.

Statistical analysis of the current 2020 assessment monitoring groundwater data identified SSLs of the below Appendix IV constituents at concentrations exceeding the noted state or federal GWPS. Details are provided in the *2020 Annual Groundwater Monitoring and Corrective Action Report*.

AP-2 (Federal CC Rule):

- Cobalt: HGWC-18, MW-33

AP-2 (EPD CCR Rule):

- Cobalt: HGWC-18, MW-33
- Molybdenum: MW-21D

An alternate source demonstration (ASD) was submitted in January 2020 to demonstrate that Co SSLs at well HGWC-18 are not due to a release of Co from the unit (Geosyntec, 2020c); however, as indicated in a letter dated June 26, 2020, EPD was not able to approve the ASD at that time, but remained open to reviewing additional information that may support an updated ASD. Data collection at the Site is ongoing to support the ACM, which also further enhances the understanding of the conceptual site model (CSM) and Co SSL at HGWC-18.

Currently, the Co SSL identified in HGWC-18 is vertically delineated by MW-21D. Due to the presence of a surface water feature in the downgradient direction of HGWC-18, installation of additional wells to horizontally characterize this area is infeasible (**Figure 3**). For this reason, Georgia Power collected surface water samples in July 2020 and December 2020 from three locations in the unnamed creek west of AP-2 and two locations in the Coosa River, as shown on **Figure 2**, to horizontally delineate Co at the Site. Surface water samples were collected from two additional locations upstream of AP-2 which are not shown on Figure 2 (i.e., H-0.5 and H-2). Surface water data reported for locations AP2 UP and AP2 MID along the unnamed creek are specifically used to

delineate Co in HGWC-18. Cobalt was not detected in the three unnamed creek and two AP-2 related Coosa River surface water samples collected (i.e., H+0.25 and H+0.75). Therefore, based on Co data collected to date, no Co impacts to surface water have been detected and horizontal delineation is complete. The analytical laboratory reports associated with these sampling events are provided in Appendix E of the *2020 Semiannual Groundwater Monitoring & Corrective Action Report*. An iso-concentration map for Co, generated from the September 2020 groundwater data, is presented on **Figure 4**.

Regarding the Mo SSL identified in MW-21D, the Mo concentrations in well MW-21D exhibited a steadily decreasing trend from 0.045 mg/L, reported for the initial sampling of this well in March 2019, to its lowest detection of 0.017 mg/L for the September 2020 semiannual sampling event (time series for the reported Appendix IV constituents are provided in Appendix G of the *2020 Semiannual Groundwater Monitoring & Corrective Action Report*). Georgia Power proactively installed a deeper well (MW-37D) to vertically delineate the HGWC-18/MW-21D well pair. However, the current Appendix IV data set for MW-37D is limited to less than four independent sampling events which is the required number to construct confidence intervals to statistically evaluate the results with respect to GWPS. Georgia Power will continue to monitor this well until an adequately sized data set is available to complete statistical analyses. Regarding horizontal delineation, no Mo impacts to surface water have been detected in either the unnamed creek or the Coosa River, therefore horizontal delineation is complete.

During characterization of groundwater at the Site, additional detections of Co at piezometers MW-33 and MW-35 downgradient of well HGWC-14 were reported above background Co concentrations during the 2020 semiannual assessment monitoring events. A Co SSL was identified in MW-33 following the latest assessment monitoring event conducted September 2020. The data set for MW-35, which is downgradient of MW-33, is limited to less than four independent sampling events and will be statistically evaluated in the future as data collection is ongoing. However, as a proactive measure and due to further horizontal delineation being infeasible at MW-35 (**Figure 2**), Georgia Power sampled surface water in the Coosa River. As previously stated, Co was not detected in the two AP-2 related Coosa River surface water samples collected (i.e., sample locations H+0.25 and H+0.75) in July 2020 and December 2020. Therefore, based on Co results collected to date, no Co impacts to surface water have been detected and horizontal delineation of MW-33 and MW-35 is complete.

Vertical delineation of Co to below the GWPS at MW-33 is achieved by MW-34D. Well MW-34D is installed less than 30 feet upgradient of MW-33 and screened approximately

26 feet deeper than MW-33. Cobalt has not been detected above the GWPS in MW-34D and serves to vertically delineate Co in MW-33.

Georgia Power will continue to adaptively manage the site and use ongoing data collection to evaluate the need for additional wells at AP-2. Pursuant to § 257.96, groundwater in the vicinity of AP-2 continues to be monitored during the ACM phase in accordance with the established assessment monitoring program.

2.0 SUMMARY OF WORK COMPLETED

The following summarizes the field investigations and data evaluations completed since the issuance of the prior semiannual progress report in August 2020 (Geosyntec, 2020b) in support of delineating Appendix IV SSLs and evaluation of the corrective measures presented in the ACM Report. The routine assessment monitoring event conducted in September 2020 is discussed in the *2020 Annual Groundwater Monitoring and Corrective Action Report*. The analysis of groundwater was designed to support a tiered evaluation of MNA and potential supporting remedies in accordance with USEPA guidelines (USEPA, 2015).

2.1 Field Activities

2.1.1 Installation of Deep-Screened Background Compliance Wells

As previously mentioned, Georgia Power installed three additional compliance wells (HGWA-42D, HGWA-43D, and HGWA-44D) in August 2020 to provide additional data to characterize background groundwater quality and flow conditions upgradient of AP-2. The well screens for HGWA-42D and HGWA-43D were installed at a depth generally corresponding to the screen elevations of the first tier of vertical delineation wells installed downgradient of AP-2 (i.e., MW-21D, MW-23D, MW-34D, and MW-36D). Well HGWA-44D was installed at approximately 42 feet below HGWA-43D to characterize groundwater conditions in a deeper zone of the uppermost aquifer. Well construction details are provided in **Table 2**. Detailed boring and well construction logs for the installation of wells HGWA-42D, HGWA-43D, and HGWA-44D are provided in **Appendix B**. A well installation report for these three wells was submitted to EPD in November 2020 (Geosyntec, 2020d) and provided in Appendix B of the *2020 Annual Groundwater Monitoring and Corrective Action Report* as reference.

The data obtained from the new background compliance wells allow for refinement of the CSM and supplement the data obtained from the six shallower background compliance wells (HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, and HGWA-6).

2.1.2 Supplemental Sampling for Geochemical Evaluation

Supplemental groundwater samples were collected from the entire AP-2 compliance and delineation well networks during the September 2020 monitoring event and submitted under chain-of-custody protocol to Pace Analytical Services, LLC. in Norcross, Georgia. The additional samples were analyzed for major cations (calcium [Ca], magnesium [Mg],

potassium [K], and sodium [Na]) and anions (chloride [Cl], sulfate [SO₄], and bicarbonate alkalinity [HCO₃]) as well as iron (Fe), manganese (Mn), and sulfide (S²⁻).

The data obtained from the supplemental groundwater samples were used to refine the existing geochemical evaluation presented in the previous semiannual progress report (Geosyntec, 2020b).

3.0 SUMMARY OF RESULTS

The following presents the results of the work outlined in Section 2.

3.1 Refined Geochemical Evaluation

An updated geochemical evaluation of groundwater and pore water was conducted using the groundwater data collected in September 2020 from select AP-2 compliance and delineation wells and the pore water data collected in April 2020 from sampling locations within the CCR unit. **Figure 2** depicts the locations of the monitoring well network and pore water piezometers. The geochemical groundwater and pore water data are presented in **Table 3**, together with Appendix III and IV groundwater data for the 2020 reporting period. The laboratory reports associated with the data are provided in Appendix E of the *2020 Annual Groundwater Monitoring and Corrective Action Report*.

Groundwater and pore water data from select wells and piezometers are graphically presented in Piper and Stiff diagrams as shown on **Figure 5** and **Figures 6A** through **6C**. The Piper and Stiff diagrams are updated with new data collected in September 2020 to supplement the evaluation presented in the previous semiannual progress report, which also described the methodology for this evaluation in more detail (Geosyntec, 2020b).

The data presented on **Figure 5** show two distinct plot areas. Data from the upgradient monitoring wells represent a Ca-HCO₃ type water, as plotted on the middle-left corner of the diamond-shape plot and reflects a background signature for the Site. Data from the downgradient wells and the pore water piezometers plot near the top apex of the Piper plot. This area represents a chemical composition commonly found in CCR material and thus, reflects an ionic signature for pore water or groundwater flow from the ash pond. Well MW-37D plots away from the porewater and downgradient (shallow) wells, which is likely due to its deeper location compared to MW-21D.

Figures 6A through **6C** depict the Stiff diagrams, organized by ionic strength as noted by the scale of each figure. Background compliance monitoring wells have an ionic strength about four times smaller compared to pore water piezometers and about six times smaller than most downgradient wells used in this evaluation.

The geochemical evaluation indicates a CCR signature in the downgradient wells screened in the uppermost aquifer at the Site and a subdued signature in the deeper bedrock well. However, additional evaluations will be performed for the horizontal and vertical extent of target constituents showing SSLs, possible mechanisms for their attenuation, and the aquifer's capacity to retain these constituents.

4.0 UPDATED CONCEPTUAL SITE MODEL

AP-2 will be closed by removal of CCR materials from the unit, thereby providing a source control measure that reduces potential for migration of CCR-related constituents to groundwater. The additional data collected since the issuance of the previous semiannual progress report in August 2020 (Geosyntec, 2020b) allow the refinement of the CSM. The following bullets summarize the current understanding of the CSM within the context of selecting an appropriate groundwater corrective measure for AP-2:

- The geochemical data evaluation indicates a CCR signature in the downgradient wells screened in the uppermost aquifer at the Site and a subdued signature in the deeper bedrock well. However, additional evaluations will be performed for the horizontal and vertical extent of target constituents showing SSLs, possible mechanisms for their attenuation, and the aquifer's capacity to retain these constituents.
- Cobalt concentrations in wells HGWC-18 and MW-33, and Mo concentrations in well MW-21D currently constitute the only SSLs at AP-2. Based on Co and Mo results for data collected to date, no Co or Mo impacts to surface water have been detected and horizontal delineation is complete. Cobalt in HGWC-18 is vertically delineated to below the state and federal GWPS by well MW-21D. The Co SSL in MW-33 is vertically delineated to below the state and federal GWPS by MW-34D. Mo at MW-21D is below the federal GWPS and additional groundwater monitoring of the well will determine whether the observed decreasing concentrations will drop to below the state GWPS, as is expected. Vertical delineation of Mo in MW-21D is pending sufficient data collection for statistical analysis at the deeper delineation well (MW-37D).
- Cobalt appears to be mostly mobilized through low pH conditions. There are similar relationships between pH and Co concentration observed in upgradient well HGWA-2 and downgradient well HGWC-18. There is also naturally elevated Co present within the aquifer matrix (up to 86 mg/kg) documented at the Site. Additional data collection at the Site is ongoing to support the ACM and to enhance the CSM with respect to the source of acidity and elevated Co concentrations in groundwater.

5.0 UPDATED EVALUATION OF CORRECTIVE MEASURES

As discussed during the last progress report, the potential corrective measures PRB and vertical barrier wall were eliminated from further evaluation to treat the site-specific constituents in groundwater. The remaining three potential corrective measures were retained for further evaluation. Data collected during the past six months reported in the current progress report have not resulted in the elimination of additional corrective measures. Therefore, the following three potential corrective measures, which have been described in further detail in the previous progress report, will be retained for further evaluation:

- Geochemical Injections:
 - This potential corrective measure may still be feasible around well HGWC-18 and potentially south of AP-2 either as a direct measure to attenuate elevated Co concentrations in a localized area through the formation of sparingly soluble minerals, or as an indirect measure by locally adjusting the groundwater pH to immobilize Co via adsorption under higher pH conditions.
- Hydraulic Containment:
 - Hydraulic containment is applicable to a variable mix of inorganic constituents, including dissolved Co and Mo, and this potential corrective measure may still be feasible through targeted extraction of impacted groundwater at AP-2. The currently existing infrastructure of conveyance pipes and the temporary water treatment plant located near AP-1 at the Site could be used for groundwater treatment and discharge for a limited time during and shortly after closure construction at AP-2.
- Monitored Natural Attenuation:
 - Monitored natural attenuation may either be a stand-alone corrective measure or be part of a combination of corrective measures to address groundwater impacts, depending on the outcome of upcoming data collections and statistical analyses. Additional characterization activities of the aquifer matrix are planned during the next six months to evaluate MNA in a tiered approach consistent with EPA guidance.

Given that groundwater conditions and/or statistical results continue to change and are likely to also be affected by closure and construction activities at AP-2, an adaptive site management approach will be used to address groundwater conditions as a consequence of closure activities. The data collection efforts outlined in this semiannual progress report will further refine the CSM and allow a more detailed evaluation of the three potential groundwater corrective measures retained for further consideration.

6.0 PLANNED ACTIVITIES & ANTICIPATED SCHEDULE

The proposed closure by removal approach provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. During the pond closure by removal of CCR, temporary changes in site conditions may occur that must be considered as part of remedy selection. Georgia Power proactively initiated adaptive site management as outlined in the ACM Report (Geosyntec, 2019a) to support the remedial strategy and address potential changes in site conditions as appropriate. The adaptive site management approach may be adjusted over the Site's life cycle as new site information and technologies become available. To this end, Georgia Power will continue its data collection efforts as necessary in support of efforts to refine the CSM and to further evaluate the feasibility of the corrective measures retained for further evaluation. Once sufficient data are available to make technically sound decisions regarding the ability to implement one or more specific corrective measures, necessary steps will be taken to design and implement a remedy for AP-2 in accordance with § 257.98.

Supplementary data collection and evaluation activities proposed to be completed during the next semiannual reporting period are presented in **Table 4**.

- *Collect aquifer solids from one background and four downgradient locations for specialized analyses to characterize these solids for evaluation of MNA consistent with EPA's tiered approach.*
- *Install and sample two temporary piezometers inside and outside the unit upgradient of well HGWC-18 to evaluate the source of acidity in HGWC-18.*
- *Evaluate conceptual layouts of a hydraulic containment corrective measure to evaluate hydraulic capture zones and pumping rates during and after closure activities.*

Georgia Power will continue to prepare semiannual progress reports to document AP-2 groundwater conditions, results associated with additional data collection, and the progress in selecting and designing a groundwater remedy in accordance with § 257.97(a). Georgia Power will include future semiannual progress reports in routine groundwater monitoring and corrective action reports. Record keeping, notifications, and publicly accessible internet site requirements for the semiannual progress reports will be provided in accordance with § 257.105(h)(12), § 257.106(h)(9), and § 257.107(h)(9), respectively.

7.0 REFERENCES

- Geosyntec Consultants, 2019a. *Assessment of Corrective Measures Report – Plant Hammond Ash Pond 2 (AP-2)*. June 2019.
- Geosyntec Consultants, 2019b. *Semi-Annual Remedy Selection and Design Progress Report – Plant Hammond Ash Pond 2 (AP-2)*. December 2019.
- Geosyntec Consultants, 2019c. *2018 Annual Groundwater Monitoring and Corrective Action Report - Plant Hammond Ash Pond 2 (AP-2)*. January 2019.
- Geosyntec Consultants, 2020a. *Supplemental Semi-Annual Remedy Selection and Design Progress Report – Plant Hammond Ash Pond 2 (AP-2)*. January 2020.
- Geosyntec Consultants, 2020b. *Semiannual Remedy Selection and Design Progress Report – Plant Hammond Ash Pond 2 (AP-2)*. August 2020.
- Geosyntec Consultants, 2020c. *Alternate Source Demonstration – Plant Hammond Ash Pond 2 (AP-2)*. January 2020.
- Geosyntec Consultants, 2020d. *Well Design, Installation, and Development Report – Addendum No. 3*. November 2020.
- Geosyntec Consultants. 2021a. *Risk Evaluation Report – Georgia Power Company – Plant Hammond Ash Pond 2*. January 2021.
- Geosyntec Consultants. 2021b. *2020 Annual Groundwater Monitoring and Corrective Action Report - Plant Hammond Ash Pond 2 (AP-2)*. January 2021.
- U.S. Environmental Protection Agency. 2015. *Use of Monitored Natural Attenuation for Inorganic Contaminants in Groundwater at Superfund Sites*. Office of Solid Waste and Emergency Response Directive 9283.1-36, August 2015.

TABLES

Table 1
Evaluation of Remedial Technologies
Plant Hammond AP-2, Floyd County, Georgia

Corrective Measure	Regulatory Citation for Criteria:		40 CFR 257.96(C)(1)		40 CFR 257.96(C)(1)
	Description	Performance	Reliability	Ease of Implementation	
Geochemical Approaches (In-Situ Injection)	Use of an injection well network, or other means of introducing reagents or air into the subsurface, to provide suitable reagents for either anaerobic or aerobic attenuation of cobalt (Co). Under anaerobic conditions, Co would be attenuated within sparingly soluble sulfide minerals. Under aerobic conditions, soluble iron or manganese and oxygen (either via air sparging or through a chemical oxidant) would be injected to promote the formation of iron or manganese (oxy-) hydroxides for subsequent sorption of Co (and potentially molybdenum (Mo)) onto these mineral phases. If sufficient iron is present in groundwater, the use of air sparging alone may be considered to precipitate iron (oxy-) hydroxides for sorption. In-situ chemical oxidation (ISCO) or in-situ chemical reduction (ISCR) can be used to chemically alter the redox environment in the subsurface to affect the mobility of certain inorganic compounds, including Co. However, the main attenuation mechanism for Co and Mo is sorption, which is more dependent on pH than redox.	The effective immobilization of Co has been shown under aerobic and anaerobic conditions; however, the anaerobic approach (involving the injection of an electron donor together with iron or manganese and sulfur) requires careful study and testing. While aerobic approaches are somewhat less complex, additional aquifer characterization is needed to further evaluate these options. While both constituents can be remediated with geochemical injections, the immobilization of Mo using this approach is not well established and is still considered experimental at this time.	Reliability dependent on permeability of the subsurface and the amount and distribution of secondary iron or manganese (oxy-) hydroxides (for aerobic approach), or electron donors and soluble iron or manganese and sulfur that can be consistently distributed (for anaerobic approach). Reliable technology if injected materials can be distributed throughout the impacted aquifer. Bench- and/or pilot-scale treatability testing programs are needed to understand the biogeochemical processes that would effectively reduce migration of Co and Mo in groundwater.	Moderate. Installation of injection well network or other injection infrastructure would be required. Alternative installation approaches may be considered, such as along the downgradient edge of impacted groundwater, which would function similar to a PRB application. Potential for clogging of aquifer matrix and/or injection well infrastructure. Chemical distribution during injections (i.e., radius of influence) needs to be evaluated.	
Hydraulic Containment	Hydraulic containment refers to the use of groundwater extraction to induce a hydraulic gradient for hydraulic capture or control the migration of impacted groundwater. This approach uses extraction wells or trenches to capture groundwater, which may subsequently require above-ground treatment and permitted discharge to a receiving water feature, reinjection into the groundwater, or reuse (e.g., land application, CCR conditioning, etc.). It is applicable to a variable mix of inorganic constituents, including dissolved Co.	Hydraulic containment is effective, but it is unclear whether full groundwater remediation can be achieved without further understanding attenuation mechanisms at the Site. At AP-2, implementation of the corrective measure is contingent on completing additional assessment activities (i.e. high-resolution site characterization, additional pump tests, flow modeling, and capture zone analysis). This is needed to refine the constituent distribution in the subsurface to target specific zones for pumping for improved mass recovery efficiency/ effectiveness and to further evaluate the potential remedy performance.	Generally reliable for hydraulic containment, but uncertainty exists whether groundwater remediation goals can be achieved within a reasonable time frame without further understanding attenuation mechanisms.	Moderate. Proven approach, and supplemental installation of extraction wells/trenches is fairly straightforward. The extracted groundwater may potentially require an above-ground treatment system. A variety of sorption and precipitation approaches exist for ex-situ treatment of Co. Operation and maintenance (O&M) requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals.	
Monitored Natural Attenuation (MNA)	MNA relies on natural attenuation processes to achieve site-specific remediation objectives within a reasonable time frame relative to more active methods. Under certain conditions (e.g., through sorption, mineral precipitation or oxidation-reduction reactions), MNA effectively reduces the dissolved concentrations of inorganic constituents in groundwater. Attenuation mechanisms for inorganic constituents at CCR sites, including Co and Mo at AP-2, are either physical (e.g. dilution, dispersion, flushing, and related processes) or chemical (sorption or oxidation reduction reactions. Chemical attenuation processes include precipitation and sorption reactions such as adsorption on the surfaces of soil minerals, absorption into the matrix of soil minerals, or partitioning into organic matter. Further, oxidation-reduction (redox) reactions, via abiotic or biotic processes, can transform the valence states of some inorganic constituents to less soluble and thus less mobile forms. For Co and Mo, main attenuation processes include sorption to iron and manganese oxides (Co and Mo), aluminum oxides (Mo), and formation of sparingly soluble sulfide minerals (Co).	Physical and chemical MNA mechanisms for Co, including dilution, dispersion, sorption, and oxidation reduction reactions, can be effective at achieving groundwater protection standards (GWPS) within a reasonable time frame. Source control will improve the mass balance such that the buffer capacity of the aquifer is unlikely to be exhausted, and the attenuation processes already at work for Co and Mo at AP-2 will further enhance ongoing MNA.	Reliable as long as the aquifer conditions that result in Co attenuation remain favorable and/or are being enhanced and sufficient attenuation capacity is present. MNA is reliable and can either be used as a stand-alone corrective measure for groundwater impacted by dissolved Co or Mo, or in combination with a second technology.	Reasonably implementable with respect to infrastructure, but moderate to complex with respect to documentation. Proven approach, but additional data are needed to show that the existing attenuation capacity is sufficient to meet site objectives within a reasonable timeframe. A monitoring well network already exists to implement future groundwater monitoring efforts.	
Permeable Reactive Barrier	Permeable reactive barrier (PRB) technology typically involves the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater passes through. Either ZVI-Carbon matrix or solid carbon (bio-barrier) are currently proposed for the concurrent removal of Co and Mo. The carbon could be composed of peat moss, mulch or another carbon source. Exact placement of the PRB is contingent on finalization of the nature and extent characterization. PRB walls are typically keyed into the bedrock. While the shallow groundwater in the residuum and fractured bedrock is connected to the groundwater in more competent bedrock, the higher permeability/conductivity of the PRB is not expected to impede groundwater flow. PRBs can also be constructed as "funnel and gate" systems, where a barrier wall directs groundwater to a smaller "treatment gate" filled with reactive media.	PRBs have been shown to effectively address Co (and to a lesser degree Mo) in groundwater if the right mix of reactive materials (e.g., ZVI and carbon) is selected for removal/immobilization of the constituent. The approach is expected to achieve GWPS for Co and possibly Mo as impacted groundwater passes through the reactive barrier. Additional testing is required to select the appropriate sorptive media mix.	Reliable groundwater corrective measure, but loss of reactivity over time may require re-installation depending on the duration of the remedy. Additional data collection, including conducting a bench and/or pilot study, is needed to better characterize current attenuation mechanisms and/or select the appropriate reactive media mix for a PRB wall.	Moderate to difficult. Trenching would be required to install a mix of reactive materials in the subsurface. Continuous trenching may be the most feasible construction method. Installation methods and materials are readily available. Once installed, treatment will be passive and O&M requirements are minimal if replacement of the PRB is not necessary. Technically infeasible to construct a PRB at the required depths to address the aquifer zone in the vicinity of MW-21D (>30 ft into bedrock).	
Subsurface Vertical Barrier Walls	This approach involves placing a barrier to groundwater flow in the subsurface, frequently around a source area, to prevent future migration of dissolved constituents in groundwater from beneath the source to downgradient areas. In general, barrier walls are designed to provide containment; localized treatment achieved through the sorption or chemical precipitation reactions from construction of the walls are incidental to the design objective. Barrier walls can also be used in downgradient applications; to limit discharge to a surface water feature or to reduce aquifer recharge from an adjacent surface water feature when groundwater extraction wells are placed near one. A variety of barrier materials can be used, including cement and/or bentonite slurries, geomembrane composite materials, or driven materials such as steel or vinyl sheet pile. Groundwater extraction from upgradient of the barrier is required to avoid groundwater mounding behind the barrier.	Barrier walls are a proven technology for seepage control and/or groundwater cutoff at impoundments. Slurry walls are limited by the depth of installation; sheet piling and trenching are typically limited to depths of approximately 50 feet below ground surface (ft bgs); specialty drilling/installation techniques can achieve depths greater up to approximately 90 ft bgs. However, site-specific geologic and technology-specific considerations may limit this depth to shallower installations. Within the context of AP-2, a barrier wall might be used in conjunction with a "funnel and gate" system for a PRB rather than a stand-alone technology. As such, groundwater with Co and Mo above GWPS could either be directed to "treatment gates" for passive treatment (in a PRB) or migration of impacted groundwater could be minimized via barrier wall installation. Additional subsurface investigations, aquifer testing, and compatibility testing with site-specific groundwater will be needed.	Generally reliable as a barrier to groundwater flow; however, treatment of downgradient groundwater is incidental and not the primary objective.	Moderate to difficult. Trenching will be required to fill in the various slurry mixes; alternatively, sheet pile installations can be accomplished without excavation of trenches. The application of barrier walls is limited by the depth of installation, which similar to PRBs, should be keyed into a low permeability layer such as a thick clay layer or bedrock. Installation methods and materials are readily available. Once installed, above-ground infrastructure to pump and treat groundwater will be required. O&M requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals. Technically infeasible to construct a barrier wall at the required depths to address the aquifer zone in the vicinity of MW-21D (>30 ft into bedrock).	

Table 1
Evaluation of Remedial Technologies
Plant Hammond AP-2, Floyd County, Georgia

Corrective Measure	40 CFR 257.96(C)(1)	40 CFR 257.96(C)(2)	40 CFR 257.96(C)(3)
	Potential Impacts	Time Requirement to Begin/Complete	Institutional Requirements
Geochemical Approaches (In-Situ Injection)	Minimal impacts are expected if remedy works as designed, based on a thorough pre-design investigation, geochemical modeling, and bench/pilot study results. Redox-altering processes have the potential to mobilize naturally-occurring constituents as an unintended consequence if not properly studied and implemented.	Installation of the injection network can be accomplished relatively quickly (1 to 2 months). However, a thorough pre-design investigation, geochemical modeling, and/or bench- and/or pilot-testing will be required to obtain design parameters prior to design and construction of the corrective measure, which may take up to 24 months. Once installed, the time required to achieve GWPS within the treatment area may be relatively quick but depends on the attenuation process kinetics of each targeted constituent. The time for complete distribution of the injected materials throughout the treatment area is also variable.	Deed restrictions may be necessary until in-situ treatment has achieved GWPS. A new UIC permit (for in-situ injections) would be required to implement this corrective measure. No other institutional requirements are expected at this time.
Hydraulic Containment	Moderate. The main potential impacts are related to the presence and operation of an on-site above-ground water treatment facility and related infrastructure to convey and treat extracted groundwater. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone.	Installation of extraction wells and/or trenches can be accomplished relatively quickly (1 to 2 months). However, additional aquifer testing, system design and installation, and permit approval may be required, which may take up to 24 months. The initiation of the approach would be contingent on the start-up of the wastewater treatment infrastructure. Hydraulic containment can be achieved relatively quickly after startup of the extraction system, but uncertainty exists with respect to the time to achieve GWPS without additional data collection to better understand attenuation mechanisms for Co.	Depending on the effluent management strategy, modifications to the existing NPDES permit may be required, or obtaining a new underground injection control (UIC) permit may be needed if groundwater reinjection is chosen. In addition, deed restrictions may be required as long as groundwater conditions are above regulatory standards for unrestricted use.
Monitored Natural Attenuation (MNA)	None. MNA relies on the natural processes active in the aquifer matrix to reduce constituent concentrations without disturbing the surface or the subsurface.	The infrastructure to initiate MNA is already in place. Demonstrating attenuation mechanisms and capacity can be time-consuming and can take up to 24 months. MNA is expected to be successful within a reasonable time frame. Engineering measures will be implemented during closure of AP-2 to minimize potential impacts to the subsurface during closure activities and routine groundwater monitoring will be used to verify that groundwater impacts remain stable or decrease over time.	MNA may require the implementation of institutional controls, such as deed restrictions, to preclude potential exposure to groundwater within the footprint of impacted groundwater until GWPS are achieved.
Permeable Reactive Barrier	Minimal impacts are expected following the construction of the remedy. However, ZVI has the potential to create anaerobic conditions downgradient of the PRB wall that may mobilize redox-sensitive naturally-occurring constituents. These conditions need to be carefully monitored. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures.	Installation of a PRB can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, bench- and/or pilot-testing would be required to obtain design parameters prior to design and construction of the remedy, which may take up to 24 months. Once installed, the time to achieve GWPS downgradient of the PRB is anticipated to be relatively quick.	Deed restrictions may be necessary for groundwater areas upgradient of the PRB (if not installed along the waste boundary). No other institutional requirements are expected at this time.
Subsurface Vertical Barrier Walls	Minimal impacts are expected following the construction of the remedy. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures. Changes to groundwater flow patterns due to installation of the barrier wall are expected, which can affect other aspects of groundwater corrective action. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone that may result in the mobilization of other constituents that may require treatment.	Installation of a barrier wall can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, some design phase and additional aquifer and compatibility testing will be required, which may take up to 24 months. Once installed, preventing migration of constituents dissolved in groundwater is anticipated to be relatively quick. Since this approach does not treat the downgradient area of impacted groundwater but prevents migration from a source area, it will likely have to be maintained long-term and coupled with other approaches.	Deed restrictions may be necessary for groundwater areas downgradient of the barrier wall until remedial goals are met. No other institutional requirements are expected at this time.

Table 1
Evaluation of Remedial Technologies
Plant Hammond AP-2, Floyd County, Georgia

Corrective Measure	40 CFR 257.96(C)(3)		
	Other Env or Public Health Requirements	Relative Costs	Evaluation of Retainage
Geochemical Approaches (In-Situ Injection)	Based on the results of the Risk Evaluation Report (Geosyntec, 2021a), SSL-related constituents (Co, Mo) evaluated from AP-2 are not expected to pose a risk to human health or the environment; therefore, no further risk evaluation for groundwater is warranted based on the current data set. Georgia Power will proactively evaluate the data and update this evaluation, if necessary. Potential for mobilization of redox-sensitive constituents exists during implementation of an anerobic attenuation approach. Following installation, the remedy is passive.	Medium (depending on expanse of injection network required and injectate volume required per derived design parameters)	Retained for further analysis; could be applied to immobilize Co as a sparingly-soluble mineral, or could be applied to raise the groundwater pH to promote immobilization through sorption mechanisms. Additional evaluation required to determine efficacy to treat Mo in bedrock.
Hydraulic Containment	Based on the results of the Risk Evaluation Report (Geosyntec, 2021a), SSL-related constituents (Co, Mo) evaluated from AP-2 are not expected to pose a risk to human health or the environment; therefore, no further risk evaluation for groundwater is warranted based on the current data set. Georgia Power will proactively evaluate the data and update this evaluation, if necessary. Above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.	Medium to high (depending on remedy duration, complexity of above-ground treatment system, and volume of water processed)	Retained for further analysis; extracted water could be routed to wastewater treatment infrastructure built for dewatering and closure of ponds at the site; generally accepted by most stake-holders. Could be considered an effective measure to maintain hydraulic control along Coosa River and/or the unnamed creek west of AP-2 should closure construction activities require an interim groundwater treatment configuration.
Monitored Natural Attenuation (MNA)	Little to no physical disruption to remediation areas and no adverse construction-related impacts are expected on the surrounding community. Based on the results of the Risk Evaluation Report (Geosyntec, 2021a), SSL-related constituents (Co, Mo) evaluated from AP-2 are not expected to pose a risk to human health or the environment; therefore, no further risk evaluation for groundwater is warranted based on the current data set. Georgia Power will proactively evaluate the data and update this evaluation, if necessary.	Low to medium	Retained for further analysis; may be used as a stand-alone corrective measure or in conjunction with other potential groundwater corrective measures.
Permeable Reactive Barrier	Based on the results of the Risk Evaluation Report (Geosyntec, 2021a), SSL-related constituents (Co, Mo) evaluated from AP-2 are not expected to pose a risk to human health or the environment; therefore, no further risk evaluation for groundwater is warranted based on the current data set. Georgia Power will proactively evaluate the data and update this evaluation, if necessary. Following installation, the remedy is passive. However, certain treatment media (such as ZVI) have the potential to mobilize naturally-occurring constituents downgradient of the PRB.	Medium to high (for installation) - minimal O&M requirements if replacement is not necessary	Not retained for further analysis; does not address downgradient groundwater when installed along the compliance boundary; impractical to construct a wall at the required depths (>30ft into bedrock); potential for increased maintenance due to potential biofouling and mineral precipitation.
Subsurface Vertical Barrier Walls	Based on the results of the Risk Evaluation Report (Geosyntec, 2021a), SSL-related constituents (Co, Mo) evaluated from AP-2 are not expected to pose a risk to human health or the environment; therefore, no further risk evaluation for groundwater is warranted based on the current data set. Georgia Power will proactively evaluate the data and update this evaluation, if necessary. Due to the need for groundwater extraction associated with barrier walls, above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.	Medium to high (depending on length and depth of wall, remedy duration and complexity of above-ground treatment system)	Not retained for further analysis; should be considered as part of source control, which is unnecessary in the context of closure by removal of CCR; impractical to construct a wall at the required depths (>30ft into bedrock); furthermore, does not address downgradient groundwater when installed along the compliance boundary.

Table 2
Monitoring Well Network Summary
Plant Hammond AP-2, 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 (ft)
Compliance Monitoring Well										
HGWA-1	Upgradient	12/3/2014	1550423.32	1940770.00	592.32	595.21	573.12	563.12	32.49	10
HGWA-2	Upgradient	12/2/2015	1549796.87	1939845.15	585.29	587.92	570.29	560.29	27.95	10
HGWA-3	Upgradient	12/2/2015	1549794.41	1939833.39	585.23	587.74	553.23	543.23	44.51	10
HGWA-4	Upgradient	12/3/2014	1549930.45	1939385.45	584.94	587.60	572.24	562.24	25.76	10
HGWA-5	Upgradient	12/10/2015	1548633.33	1937184.17	580.52	583.24	564.92	554.92	28.72	10
HGWA-6	Upgradient	12/11/2015	1548636.35	1937177.73	580.72	583.38	543.72	533.72	49.66	10
HGWA-42D	Upgradient	8/27/2020	1549363.72	1938443.86	583.39	586.17	528.39	518.39	67.91	10
HGWA-43D	Upgradient	8/26/2020	1550422.85	1940753.80	592.08	595.08	544.08	534.08	61.25	10
HGWA-44D	Upgradient	8/25/2020	1550409.13	1940756.18	592.01	594.79	491.76	481.76	113.50	10
HGWC-14	Downgradient	10/16/2014	1547998.96	1938406.27	594.67	597.25	564.67	554.67	42.98	10
HGWC-15	Downgradient	10/20/2014	1547875.33	1937854.92	578.73	581.49	553.93	543.93	37.96	10
HGWC-16	Downgradient	10/21/2014	1548209.83	1937540.33	577.36	580.02	557.36	547.36	33.06	10
HGWC-17	Downgradient	10/22/2014	1548449.71	1937538.98	581.51	584.30	566.91	556.91	27.79	10
HGWC-18	Downgradient	10/22/2014	1548821.27	1937558.32	581.36	584.18	566.86	556.86	27.71	10
Piezometer										
MW-8	Downgradient	10/29/2014	1548171.86	1940016.70	584.25	587.37	565.05	555.05	32.72	10
MW-9	Downgradient	10/29/2014	1548131.38	1938922.16	588.42	591.67	569.12	559.12	32.95	10
MW-12	Downgradient	10/21/2014	1547853.78	1937525.46	580.59	584.33	555.79	545.79	38.94	10
MW-16	Downgradient	10/27/2014	1549104.17	1937940.06	571.70	575.22	562.20	552.20	23.42	10
MW-17	Downgradient	10/28/2014	1549163.28	1938345.81	583.68	587.67	568.98	558.98	29.09	10
MW-18	Downgradient	10/29/2014	1548984.15	1938712.73	589.75	593.07	571.05	561.05	32.42	10
MW-33	Downgradient	11/21/2019	1547973.50	1938412.13	591.19	593.92	566.60	556.60	37.72	10
MW-34D	Downgradient	5/6/2020	1547996.82	1938392.20	593.83	596.51	530.48	520.48	73.68	10
MW-35	Downgradient	5/13/2020	1547905.33	1938417.82	571.88	574.40	558.70	548.70	23.52	10
MW-36D	Downgradient	5/7/2020	1548435.43	1937538.19	581.44	584.10	534.12	524.12	57.65	10
Delineation Monitoring Well										
MW-21D	Downgradient	11/19/2018	1548814.86	1937555.78	581.16	583.84	542.36	532.36	51.88	10
MW-22	Downgradient	11/15/2018	1547854.68	1937832.04	576.05	578.51	551.45	541.45	37.47	10
MW-23D	Downgradient	11/15/2018	1547876.55	1937843.89	579.06	581.30	529.46	519.46	62.24	10
MW-37D	Downgradient	5/8/2020	1548803.01	1937551.05	580.95	583.58	514.65	504.65	76.63	10

- Notes:
- ft = feet.
 - ft BTOC = feet below top of casing.
 - (1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey data obtained 5/19/2020 and 10/10/2020 (for wells HGWA-42D, HGWA-43D and HGWA-44D).
 - (2) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Survey data obtained 5/19/2020 and 10/10/2020 (for wells HGWA-42D, HGWA-43D and HGWA-44D).
 - (3) Total well depth accounts for sump if data provided on well construction logs.

Table 3
Summary of Groundwater and Pore Water Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:	HGWA-1	HGWA-1	HGWA-1	HGWA-2	HGWA-2	HGWA-2	HGWA-3	HGWA-3	HGWA-3	HGWA-4	HGWA-4	HGWA-4	HGWA-5	HGWA-5	HGWA-5	HGWA-6	HGWA-6	HGWA-6		
Sample Date:	3/2/2020	3/25/2020	9/15/2020	3/2/2020	3/25/2020	9/15/2020	3/2/2020	3/25/2020	9/15/2020	3/2/2020	3/26/2020	9/15/2020	3/2/2020	3/26/2020	9/15/2020	3/2/2020	3/25/2020	9/15/2020		
Parameter ^(1,2,3)																				
APPENDIX III	Boron	--	0.025 J	0.017 J	--	0.039 J	0.044 J	--	0.0096 J	0.0071 J	--	0.012 J	0.013 J	--	0.0072 J	0.012 J	--	0.021 J	0.016 J	
	Calcium	--	127	103	--	23.0	21.1	--	89.8	73.1	--	14.9	20.4	--	27.8	27.9	--	58.1	49.9	
	Chloride	--	20.4	13.4	--	5.2	5.0	--	6.1	6.0	--	3.4	3.3	--	1.4	1.7	--	1.2	1.2	
	Fluoride	0.076 J	0.098 J	0.082 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.053 J	0.066 J	0.061 J	<0.050	<0.050	<0.050
	pH	7.10	6.95	7.15	5.43	5.36	5.22	7.12	7.40	7.29	5.63	5.77	5.75	6.80	6.38	6.33	7.67	7.39	7.37	
	Sulfate	--	85.9	47.3	--	46.3	51.5	--	50.5	44.7	--	<0.50	<0.50	--	21.6	21.2	--	35.1	35.3	
	TDS	--	496	265	--	138	124	--	284	258	--	69.0	93.0	--	104	116	--	240	217	
APPENDIX IV	Antimony	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	
	Arsenic	<0.00035	<0.00035	<0.00078	0.00043 J	<0.00035	<0.00078	0.00040 J	<0.00035	<0.00078	<0.00035	<0.00035	<0.00078	<0.00035	<0.00035	<0.00078	<0.00035	<0.00035	<0.00078	
	Barium	0.034	0.043	0.035	0.11	0.12	0.12	0.14	0.13	0.12	0.023	0.026	0.024	0.053	0.045	0.045	0.19	0.19	0.19	
	Beryllium	<0.000074	<0.000074	<0.000046	0.00014 J	0.00016 J	0.00013 J	<0.000074	<0.000074	<0.000046	0.00019 J	0.000076 J	<0.000046	<0.000074	<0.000074	<0.000046	<0.000074	<0.000074	<0.000046	
	Cadmium	<0.00011	<0.00011	<0.00012	<0.00011	0.00014 J	0.00012 J	<0.00011	<0.00011	<0.00012	<0.00011	<0.00011	<0.00012	<0.00011	<0.00011	<0.00012	<0.00011	<0.00011	<0.00012	
	Chromium	<0.00039	0.00072 J	<0.00055	0.00041 J	<0.00039	<0.00055	<0.00039	<0.00039	<0.00055	0.00040 J	<0.00039	<0.00055	0.00050 J	<0.00039	<0.00055	<0.00039	<0.00039	<0.00055	
	Cobalt	<0.00030	<0.00030	<0.00038	0.019	0.020	0.021	<0.00030	<0.00030	<0.00038	0.00063 J	0.00058 J	<0.00038	0.00093 J	0.0013 J	0.00047 J	<0.00030	<0.00030	<0.00038	
	Fluoride	0.076 J	0.098 J	0.082 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.053 J	0.066 J	0.061 J	<0.050	<0.050	<0.050	
	Lead	0.000048 J	<0.000046	<0.000036	0.000095 J	0.00011 J	0.000080 J	<0.000046	<0.000046	0.000042 J	0.00026 J	0.000059 J	0.000049 J	<0.000046	<0.000046	<0.000036	<0.000046	<0.000046	<0.000036	
	Lithium	0.0012 J	0.00083 J	0.00087 J	0.0017 J	0.0017 J	0.0015 J	0.0037 J	0.0035 J	0.0026 J	0.0012 J	0.00095 J	<0.00081	0.0036 J	0.0029 J	0.0030 J	0.012 J	0.011 J	0.0095 J	
	Mercury	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	
	Molybdenum	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	
	Comb. Radium 226/228	0.610 U	4.36	0.748 U	1.58	0.621 U	0.124 U	0.249 U	0.833 U	0.161 U	0.937 U	0.578 U	0.179 U	0.547 U	0.907 U	0.601 U	0.676 U	0.509 U	1.36 U	
Selenium	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016		
Thallium	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	0.000057 J	<0.00014		
GEOCHEM	Bicarb. Alkalinity	--	--	307	--	--	26.1	--	--	187	--	--	70.2	--	--	94.0	--	--	166	
	Iron	--	--	0.87	--	--	0.78	--	--	0.26	--	--	0.028 J	--	--	1.6	--	--	0.32	
	Magnesium	--	--	4.3	--	--	2.5	--	--	4.6	--	--	0.88	--	--	5.3	--	--	9.0	
	Manganese	--	--	0.18	--	--	0.61	--	--	0.22	--	--	0.0083 J	--	--	0.071	--	--	0.071	
	Potassium	--	--	0.34	--	--	0.89	--	--	0.46	--	--	0.28	--	--	0.72	--	--	0.61	
	Sodium	--	--	21.1	--	--	7.4	--	--	4.9	--	--	7.7	--	--	5.7	--	--	6.8	
	Sulfide	--	--	0.082 J	--	--	<0.050	--	--	<0.050	--	--	<0.050	--	--	<0.050	--	--	<0.050	

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 MDL (Specific to combined radium).

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

(2) Metals were analyzed by EPA Method 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-42D, HGWA-43D, and HGWA-44D were analyzed for the complete list of Appendix III and Appendix IV constituents to establish background groundwater quality conditions.

Table 3
Summary of Groundwater and Pore Water Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:		HGWA-42D ⁽⁴⁾	HGWA-42D ⁽⁴⁾	HGWA-43D ⁽⁴⁾	HGWA-43D ⁽⁴⁾	HGWA-44D ⁽⁴⁾	HGWA-44D ⁽⁴⁾	HGWC-14	HGWC-14	HGWC-14	HGWC-15	HGWC-15	HGWC-15	HGWC-16	HGWC-16	HGWC-16	HGWC-17	HGWC-17	HGWC-17	
Sample Date:		9/17/2020	11/11/2020	9/16/2020	11/10/2020	9/16/2020	11/10/2020	3/3/2020	3/30/2020	9/18/2020	3/3/2020	3/26/2020	9/17/2020	3/3/2020	3/30/2020	9/17/2020	3/3/2020	3/31/2020	9/16/2020	
Parameter ^(1,2,3)																				
APPENDIX III	Boron	0.098 J	0.058 J	0.061 J	0.057 J	0.23	0.29	--	11.7	11.0	--	2.1	2.2	--	2.4	2.4	--	6.9	6.7	
	Calcium	43.8	44.4	56.0	63.3	30.0	33.6	--	600	623	--	240	188	--	208	190	--	328	277	
	Chloride	5.8	3.1	4.1	4.4	7.2	7.8	--	236	288	--	142	108	--	80.2	99.3	--	161	156	
	Fluoride	0.20	0.10	0.22	0.19	0.52	0.59	<0.050	0.092 J	<0.050	0.064 J	<0.050	<0.050	<0.050	0.059 J	<0.050	<0.050	<0.050	<0.050	0.058 J
	pH	7.62	7.68	7.52	7.27	7.83	7.84	4.77	4.57	4.88	6.00	6.03	6.11	7.10	7.09	7.11	6.35	6.28	6.35	
	Sulfate	10.9	9.4	43.0	39.0	6.9	6.3	--	1150	1260	--	438	416	--	223	254	--	484	467	
	TDS	188	175	272	307	270	287	--	2590	2440	--	1000	956	--	787	804	--	1310	1220	
APPENDIX IV	Antimony	0.00055 J	<0.00028	0.00051 J	0.00043 J	0.00049 J	<0.00028	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	<0.00027	--	--	
	Arsenic	<0.00078	<0.00078	<0.00078	0.0021 J	<0.00078	<0.00078	0.0035 J	0.0051	0.0029 J	<0.00035	<0.00035	<0.00078	<0.00035	0.0011 J	<0.00078	<0.00035	0.00080 J	<0.00078	
	Barium	0.13	0.18	0.26	0.25	0.24	0.38	0.018	0.020	0.019	0.018	0.016	0.017	0.12	0.11	0.11	0.026	0.029	0.025	
	Beryllium	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	0.00043 J	0.00043 J	0.00043 J	<0.000074	<0.000074	<0.000046	<0.000074	<0.000074	<0.000046	<0.000074	<0.000074	<0.000046	
	Cadmium	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00011	<0.00011	<0.00012	0.0015 J	0.0016 J	0.0016 J	<0.00011	<0.00011	<0.00012	<0.00011	<0.00011	<0.00012	
	Chromium	<0.00055	0.00063 J	<0.00055	<0.00055	0.0012 J	0.00089 J	0.00042 J	0.00066 J	<0.00055	<0.00039	<0.00039	<0.00055	0.00071 J	0.00040 J	<0.00055	0.0018 J	<0.00039	<0.00055	
	Cobalt	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	0.029	0.028	0.027	0.030	0.022	0.026	0.00037 J	<0.00030	<0.00038	0.016	0.016	0.013	
	Fluoride	0.20	0.10	0.22	0.19	0.52	0.59	<0.050	0.092 J	<0.050	0.064 J	<0.050	<0.050	<0.050	0.059 J	<0.050	<0.050	<0.050	0.058 J	
	Lead	0.000062 J	0.000084 J	0.000050 J	0.000069 J	0.00021 J	0.00020 J	0.0017 J	0.0015 J	0.0012 J	0.000053 J	<0.000046	<0.000036	0.00016 J	0.000073 J	0.000078 J	0.00013 J	0.000077 J	0.000065 J	
	Lithium	0.0039 J	0.0086 J	0.0018 J	0.0013 J	0.014 J	0.025 J	<0.00078	<0.00078	<0.00081	0.0084 J	0.0061 J	0.0094 J	0.0047 J	0.0041 J	0.0043 J	0.0012 J	0.00090 J	0.0012 J	
	Mercury	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	<0.00014	--	--	
	Molybdenum	0.0037 J	<0.00069	0.0044 J	0.0072 J	0.0019 J	0.0018 J	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	<0.00095	<0.00095	<0.00069	
	Comb. Radium 226/228	0.665 U	1.28	0.531 U	0.788 U	0.422 U	0.293 U	1.84	1.08 U	1.80 U	1.43	0.855 U	0.395 U	1.32 U	0.288 U	1.10 U	1.33	0.591 U	0.295 U	
Selenium	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	0.0045 J	0.0049 J	0.0045 J	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	<0.0016		
Thallium	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	0.00026 J	0.00028 J	0.00028 J	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	0.00011 J	0.00014 J	<0.00014		
GEOCHEM	Bicarb. Alkalinity	158	--	251	--	294	--	--	--	<5.0	--	--	108	--	--	213	--	--	205	
	Iron	0.21	--	0.020 J	--	0.42	--	--	--	0.90	--	--	0.017 J	--	--	1.0	--	--	0.11	
	Magnesium	5.9	--	18.3	--	15.1	--	--	--	49.2	--	--	30.3	--	--	15.4	--	--	30.0	
	Manganese	0.062	--	0.010 J	--	0.020 J	--	--	--	5.0	--	--	18.2	--	--	0.036 J	--	--	3.3	
	Potassium	1.4	--	0.97	--	3.2	--	--	--	12.6	--	--	1.0	--	--	0.92	--	--	2.6	
	Sodium	7.9	--	14.0	--	50.3	--	--	--	10.9	--	--	12.1	--	--	9.9	--	--	13.8	
	Sulfide	0.082 J	--	<0.050	--	0.11	--	--	--	<0.050	--	--	<0.050	--	--	<0.050	--	--	<0.050	

Table 3
Summary of Groundwater and Pore Water Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:		HGWC-18	HGWC-18	HGWC-18	MW-21D	MW-21D	MW-21D	MW-21D	MW-22	MW-22	MW-22	MW-23D	MW-23D	MW-23D	MW-33	MW-33	MW-33	MW-33	
Sample Date:		3/3/2020	3/31/2020	9/15/2020	3/3/2020	4/1/2020	6/17/2020	9/21/2020	3/2/2020	3/27/2020	9/17/2020	3/2/2020	4/1/2020	9/17/2020	1/22/2020	4/1/2020	6/17/2020	9/21/2020	
Parameter ^(1,2,3)																			
APPENDIX III	Boron	--	9.4	9.4	--	6.3	5.8	5.6	--	2.4	2.3	--	3.5	2.7	11.2	11.6	10.3	9	
	Calcium	--	418	430	--	438	434	428	--	212	203	--	342	361	638	567	561	562	
	Chloride	--	126	150	--	236	223	236	--	141	153	--	166	171	231	242	250	273	
	Fluoride	0.34	0.45	0.31	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.18 J	0.15 J	0.25	0.14
	pH	4.55	4.43	4.47	6.72	6.90	6.47	6.92	5.97	5.71	5.66	7.05	6.80	6.71	--	4.35	4.36	4.48	
	Sulfate	--	934	1080	--	889	901	1010	--	419	468	--	478	490	1250	1210	1210	1290	
	TDS	--	1860	1890	--	1940	2100	2060	--	1100	1090	--	1530	1360	2310	2590	2540	2340	
APPENDIX IV	Antimony	<0.00027	--	--	<0.00027	--	--	--	<0.00027	--	--	<0.00027	--	--	--	--	--	--	
	Arsenic	0.0057	0.0056	0.0074	<0.00035	0.0013 J	<0.00035	<0.00078	<0.00035	<0.00035	<0.00078	<0.00035	0.00082 J	<0.00078	--	0.0061	0.0031 J	0.0083	
	Barium	0.026	0.029	0.030	0.058	0.066	0.054	0.049	0.027	0.025	0.020	0.060	0.065	0.057	--	0.027	0.024	0.024	
	Beryllium	0.0029 J	0.0030	0.0033	<0.000074	<0.000074	<0.000074	<0.000046	<0.000074	<0.000074	0.000047 J	<0.000074	<0.000074	<0.000046	--	0.0011 J	0.00099 J	0.00090 J	
	Cadmium	0.0021 J	0.0017 J	0.0019 J	<0.00011	<0.00011	<0.00011	<0.00012	0.0021 J	0.0019 J	0.0021 J	<0.00011	<0.00011	0.00060 J	--	0.00022 J	0.00021 J	0.00016 J	
	Chromium	0.00040 J	<0.00039	0.00063 J	<0.00039	<0.00039	0.00057 J	<0.00055	<0.00039	<0.00039	<0.00055	<0.00039	0.00086 J	<0.00055	--	0.00069 J	<0.00039	<0.00055	
	Cobalt	0.15	0.16	0.16	<0.00030	<0.00030	<0.00030	<0.00038	0.043	0.025	0.029	0.0011 J	0.0011 J	0.00096 J	0.052	0.058	0.053	0.047	
	Fluoride	0.34	0.45	0.31	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.18 J	0.15 J	0.25	0.14
	Lead	0.0013 J	0.0014 J	0.0014 J	0.000047 J	0.000048 J	<0.000046	<0.000036	0.000094 J	<0.000046	<0.000036	0.000051 J	<0.000046	0.00016 J	--	0.0017 J	0.0017 J	0.0017 J	
	Lithium	0.012 J	0.012 J	0.014 J	0.026 J	0.026 J	0.023 J	0.022 J	0.0015 J	0.0013 J	0.0011 J	0.0025 J	0.0024 J	0.0021 J	--	0.0011 J	0.00097 J	0.00086 J	
	Mercury	<0.00014	--	--	<0.00014	--	--	--	<0.00014	--	--	<0.00014	--	--	--	--	--	--	--
	Molybdenum	<0.00095	<0.00095	<0.00069	0.025	0.024	0.019	0.017	<0.00095	<0.00095	<0.00069	0.0030 J	0.0032 J	0.0026 J	--	<0.00095	<0.00095	<0.00069	
	Comb. Radium 226/228	2.35	2.70	1.65	1.94	0.758 U	0.691 U	0.436 U	0.872 U	0.960 U	0.0879 U	0.964 U	0.914 U	0.320 U	--	2.57	1.43 U	2.53	
	Selenium	0.014	0.019	0.059	<0.0013	<0.0013	<0.0013	<0.0016	<0.0013	<0.0013	0.0020 J	<0.0013	<0.0013	<0.0016	--	0.011	0.014	0.041	
Thallium	0.00013 J	0.00015 J	0.00016 J	<0.000052	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	<0.000052	<0.000052	<0.00014	--	0.00029 J	0.00028 J	0.00029 J		
GEOCHEM	Bicarb. Alkalinity	--	--	<5.0	--	--	--	32.8	--	--	61.4	--	--	249	--	--	--	<5.0	
	Iron	--	--	0.82	--	--	--	23.0	--	--	0.026 J	--	--	0.34	--	--	--	1.3	
	Magnesium	--	--	47.0	--	--	--	63.3	--	--	42.6	--	--	31.6	--	--	--	50.2	
	Manganese	--	--	3.4	--	--	--	1.4	--	--	17.6	--	--	7.9	--	--	--	4.5	
	Potassium	--	--	10.3	--	--	--	1.2	--	--	0.87	--	--	2.3	--	--	--	12.4	
	Sodium	--	--	12.2	--	--	--	15.1	--	--	13.9	--	--	13.5	--	--	--	10.8	
	Sulfide	--	--	<0.050	--	--	--	<0.050	--	--	<0.050	--	--	<0.050	--	--	--	<0.050	

Table 3
Summary of Groundwater and Pore Water Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:		MW-34D	MW-34D	MW-35	MW-35	MW-36D	MW-36D	MW-37D	MW-37D	PMW-03	PMW-04
Sample Date:		6/18/2020	9/23/2020	6/18/2020	9/21/2020	6/18/2020	9/23/2020	6/18/2020	9/23/2020	4/8/2020	4/10/2020
Parameter ^(1,2,3)											
APPENDIX III	Boron	9.4	9.8	11.9	12.3	0.067 J	0.055 J	0.14	0.12	2.4	15.4
	Calcium	584	616	517	503	65.2	62.1	165	158	230	362
	Chloride	259	295	229	257	2.3	2.2	151	166	39.0	34.9
	Fluoride	0.082 J	0.086 J	0.053 J	<0.050	0.053 J	<0.050	0.10	0.065 J	0.34	1.3
	pH	7.35	7.05	5.46	5.40	6.45	7.62	7.78	7.62	5.59	7.99
	Sulfate	1100	1100	1160	1220	50.5	56.0	286	256	920	854
	TDS	2320	2550	2310	2210	237	256	888	894	1300	1420
APPENDIX IV	Antimony	--	--	--	--	--	--	--	--	0.00043 J	0.0056
	Arsenic	0.0032 J	0.0017 J	0.0050 J	0.0059	0.00046 J	<0.00078	0.0021 J	0.00095 J	0.24	0.88
	Barium	0.044	0.044	0.029	0.028	0.15	0.17	0.19	0.14	0.045	0.40
	Beryllium	0.00015 J	0.00018 J	0.00032 J	0.00040 J	<0.000074	<0.000046	0.00012 J	<0.000046	0.00048 J	0.0029 J
	Cadmium	<0.00011	0.00019 J	0.00053 J	0.0010 J	<0.00011	<0.00012	<0.00011	<0.00012	0.00029 J	0.0027
	Chromium	0.0059 J	0.0027 J	<0.00039	0.00079 J	0.00045 J	<0.00055	0.0048 J	<0.00055	<0.00039	0.016
	Cobalt	0.011	0.0070	0.091	0.084	<0.00030	<0.00038	0.0015 J	<0.00038	0.12	0.0096
	Fluoride	0.082 J	0.086 J	0.053 J	<0.050	0.053 J	<0.050	0.10	0.065 J	0.34	1.3
	Lead	0.00087 J	0.0010 J	0.00016 J	0.00099 J	<0.000046	0.000088 J	0.0017 J	0.000082 J	0.00023 J	0.017
	Lithium	0.0021 J	0.0024 J	0.0046 J	0.0036 J	0.0087 J	0.0084 J	0.038 J	0.031	0.094	0.083
	Mercury	--	--	--	--	--	--	--	--	<0.00014	<0.00014
	Molybdenum	<0.00095	<0.00069	<0.00095	<0.00069	<0.00095	<0.00069	0.023	0.015	0.028	6.6
	Comb. Radium 226/228	1.36	0.563 U	2.02	3.85	1.85	0.410 U	1.79	0.980 U	--	--
	Selenium	0.0025 J	<0.0016	0.014	0.037	<0.0013	<0.0016	<0.0013	<0.0016	<0.0013	0.0045 J
Thallium	0.00015 J	<0.00014	0.00013 J	<0.00014	<0.000052	<0.00014	<0.000052	<0.00014	0.0037	0.00097 J	
GEOCHEM	Bicarb. Alkalinity	--	119	--	<5.0	--	159	--	133	32.5	109
	Iron	--	2.0	--	2.3	--	0.62	--	0.74	108	5.4
	Magnesium	--	53.6	--	61.6	--	7.1	--	28.1	30.8	33.0
	Manganese	--	4.1	--	10.8	--	0.045	--	0.12	1.5	0.25
	Potassium	--	10.6	--	9.2	--	0.44	--	1.4	27.8	15.4
	Sodium	--	16.8	--	11.7	--	6.8	--	53.6	12.1	22.8
	Sulfide	--	0.086 J	--	<0.050	--	0.055 J	--	0.26	<0.050	<0.050

Table 4
Proposed ACM Supplementary Data Analyses and Collection Tasks for First Semiannual Period 2021
Plant Hammond AP-2, Floyd County, Georgia

Data Collection Event	Applicable CMs ⁽¹⁾	Applicability/Rationale	Field Component	Parameters of Interest (POI)	Analytical Lab Performing Analysis
Complete an evaluation of the analytical results from specialized analysis of saturated unconsolidated aquifer matrix samples	2, 3	Evaluation of aquifer matrix for: (i) attenuation mechanisms and rates, and aquifer capacity for attenuation; and (ii) mineralogical characterization.	Collect unconsolidated aquifer solid material from the alluvium, residuum, and/or highly weathered rock zones using a DPT rig (3-4 locations downgradient and 1 background location).	Total sulfur, sulfide; organic carbon content; total concentrations of molybdenum, cobalt, lithium, iron, aluminum, manganese; X-Ray Diffraction, Scanning Electron Microscopy (SEM) and energy dispersive x-ray analysis (EDXA); cation/anion exchange capacity; and sequential extraction of molybdenum, cobalt, and lithium.	SiREM
Evaluate the source of acidity in groundwater outside of AP-2 in vicinity of HGWC-18	2, 3	Evaluate the source of acidity in select groundwater wells outside of AP-2 to evaluate whether potential groundwater corrective measures could be successful given the natural environment.	Two additional wells/piezometers will be installed between pore water piezometer PMW-04 and downgradient well HGWC-18. One temporary piezometer will be installed west of PMW-04 in the saturated ash; the second piezometer will be installed immediately outside of the ash pond and screened in groundwater.	Major cations (i.e., calcium, magnesium, sodium, and potassium) and anions (i.e., chloride, sulfate, and total, bicarbonate, and carbonate alkalinity), sulfide, iron, manganese, cobalt, dissolved (free) carbon dioxide.	Pace-ATL
Perform a conceptual-level feasibility study of applied corrective measures	1	Evaluate potential hydraulic capture zones using groundwater extraction systems (extraction well gallery); determine conceptual layouts to achieve hydraulic capture.	Not Applicable (Desktop Study)	Conceptually determine layouts for extraction well gallery to provide effective hydraulic containment while minimizing additional infrastructure or land requirements.	No lab data required; Geosyntec desktop analyses

Note:
(1) Corrective Measure (CM) Codes:
1 - Hydraulic Containment
2 - Monitored Natural Attenuation (MNA)
3 - Geochemical Injections

FIGURES



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



SITE LOCATION MAP

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

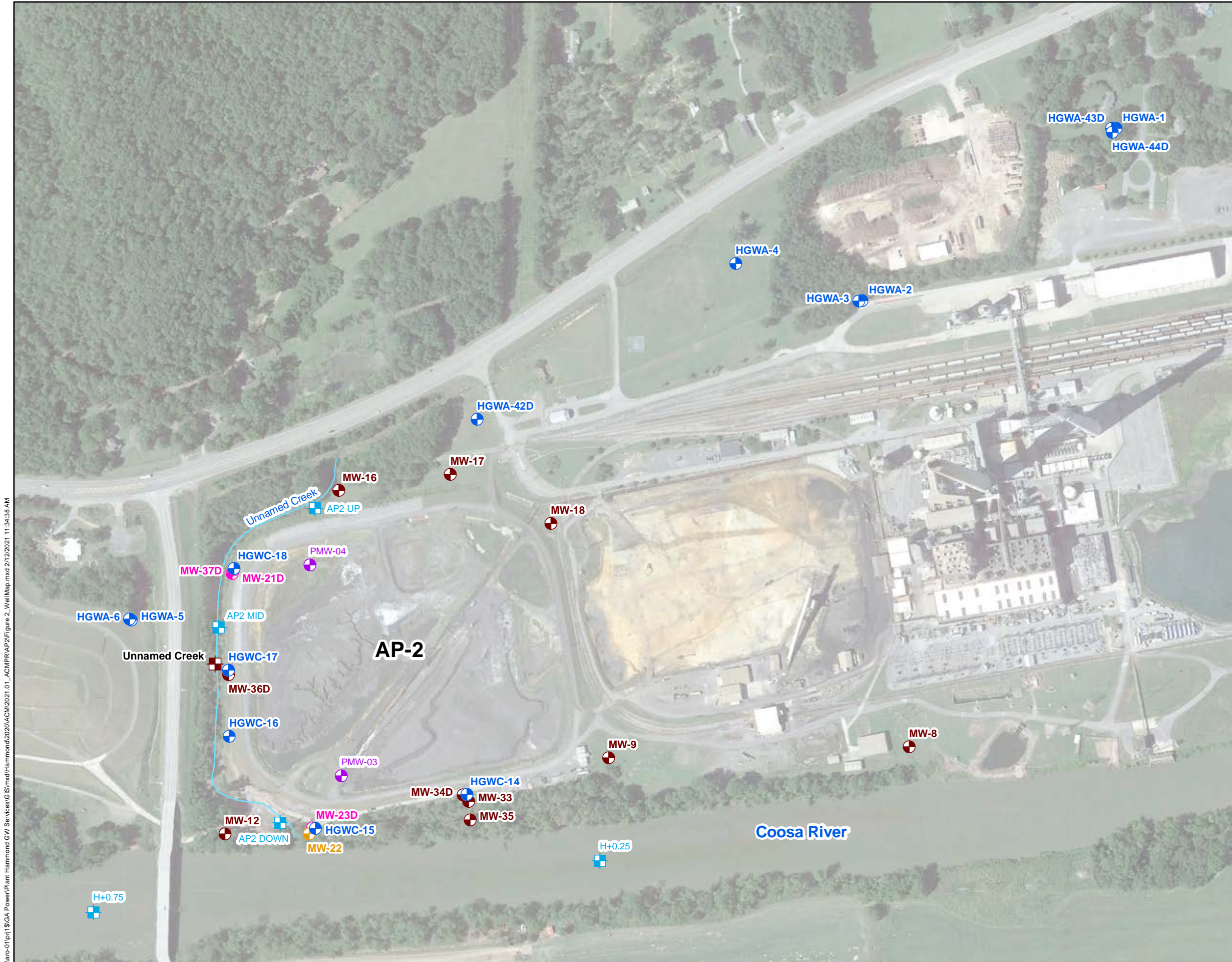
Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

KENNESAW, GA

JANUARY 2021

**FIGURE
1**



- LEGEND**
- Pore Water Piezometer
 - Compliance Monitoring Well
 - Horizontal Delineation Well
 - Vertical Delineation Well
 - Piezometer
 - Surface Water Level Gauge Point
 - Surface Water Sample Point

Note:
 1. Aerial photograph source: Google Earth Pro, August 2019.
 2. Two upstream Coosa River surface water sampling locations, H-0.5 and H-2, are not shown on the figure and located at 1942375.24, 1548207.69 and 1943448.96, 1543373.73, respectively.



MONITORING WELL NETWORK AND SAMPLING LOCATION MAP

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

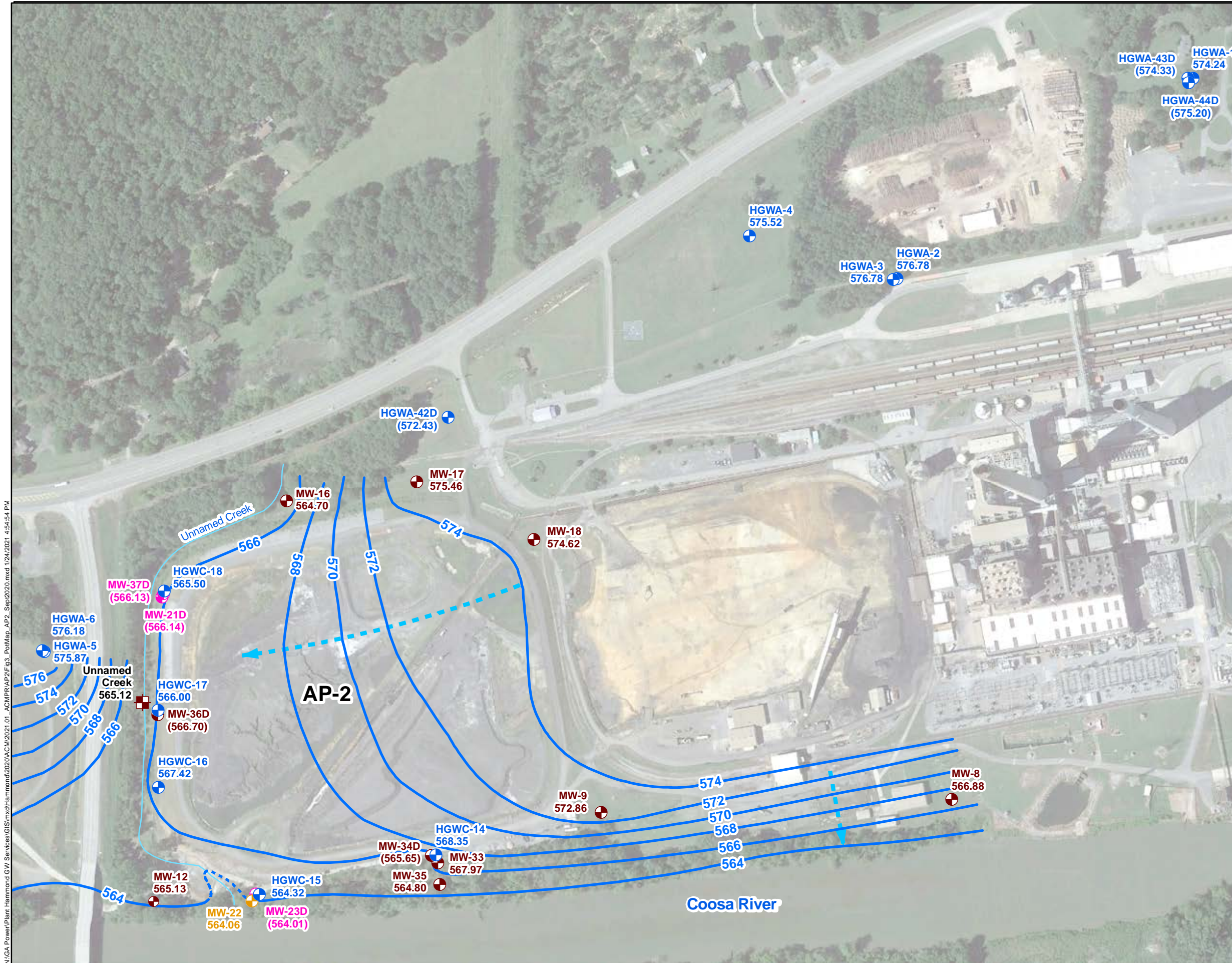
Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA JANUARY 2021

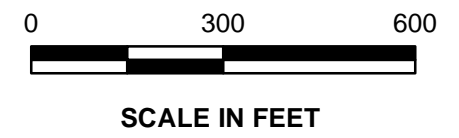
**FIGURE
2**

\\are-01\proj1\GA Power\Plant Hammond_GW Services\GIS\mxd\Hammond\2020\ACM\2021.01_ACM\PRAP2\Figure_2_WellMap.mxd 2/12/2021 11:34:38 AM



- LEGEND**
- Compliance Monitoring Well
 - Horizontal Delineation Well
 - Vertical Delineation Well
 - Piezometer
 - Surface Water Level Gauge Point
 - September 2020 Groundwater Elevation Iso-Contour (ft)
 - - - Estimated Groundwater Elevation Contour
 - ▶ Approximate Groundwater Flow Direction
 - Unnamed Creek

- Notes:
1. Water level elevations recorded on September 14, 2020. Elevation provided in feet referenced to 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. The map shows only the wells/piezometers installed at the time of the gauging event.
 4. Aerial photograph source: Google Earth Pro, August 2019.



**POTENTIOMETRIC SURFACE CONTOUR
MAP - SEPTEMBER 2020**

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

Prepared For: Georgia Power

Prepared By: Geosyntec
consultants











**FIGURE
3**

KENNESAW, GA JANUARY 2021

N:\GA Power\Plant Hammond\GIS\mxd\Hammond\2020\ACM\2021_01_ACM\PRAP2\Fig3_PotMap_AP2_Sep2020.mxd, 1/24/2021 4:54:54 PM



LEGEND

-  Compliance Monitoring Well
-  Horizontal Delineation Monitoring Well
-  Vertical Delineation Monitoring Well (not used for contouring)
-  Piezometer
-  Surface Water Sample Point
-  State GWPS Cobalt Iso-Concentration Contour (mg/L) (inferred where dashed)
-  September 2020 Groundwater Elevation Iso-Contour (ft)
-  Approximate Groundwater Flow Direction
-  Approximate AP-2
-  Approximate Plant Hammond Property Boundary

Notes:

1. Concentration data are from the September 2020 semiannual groundwater monitoring event. Surface water data collected in December 2020. Concentrations are reported in mg/L.
2. Cobalt concentrations reported for background compliance wells were used to statistically derive a Groundwater Protection Standard (GWPS) for cobalt of 0.038 mg/L.
3. Surface water samples collected from the Coosa River and the unnamed creek delineate the cobalt concentrations in HGWC-18 and MW-35 to below the GWPS.
4. Aerial photograph source: Google Earth Pro, August 2019.



**ISO-CONCENTRATION MAP
COBALT- SEPTEMBER 2020**

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

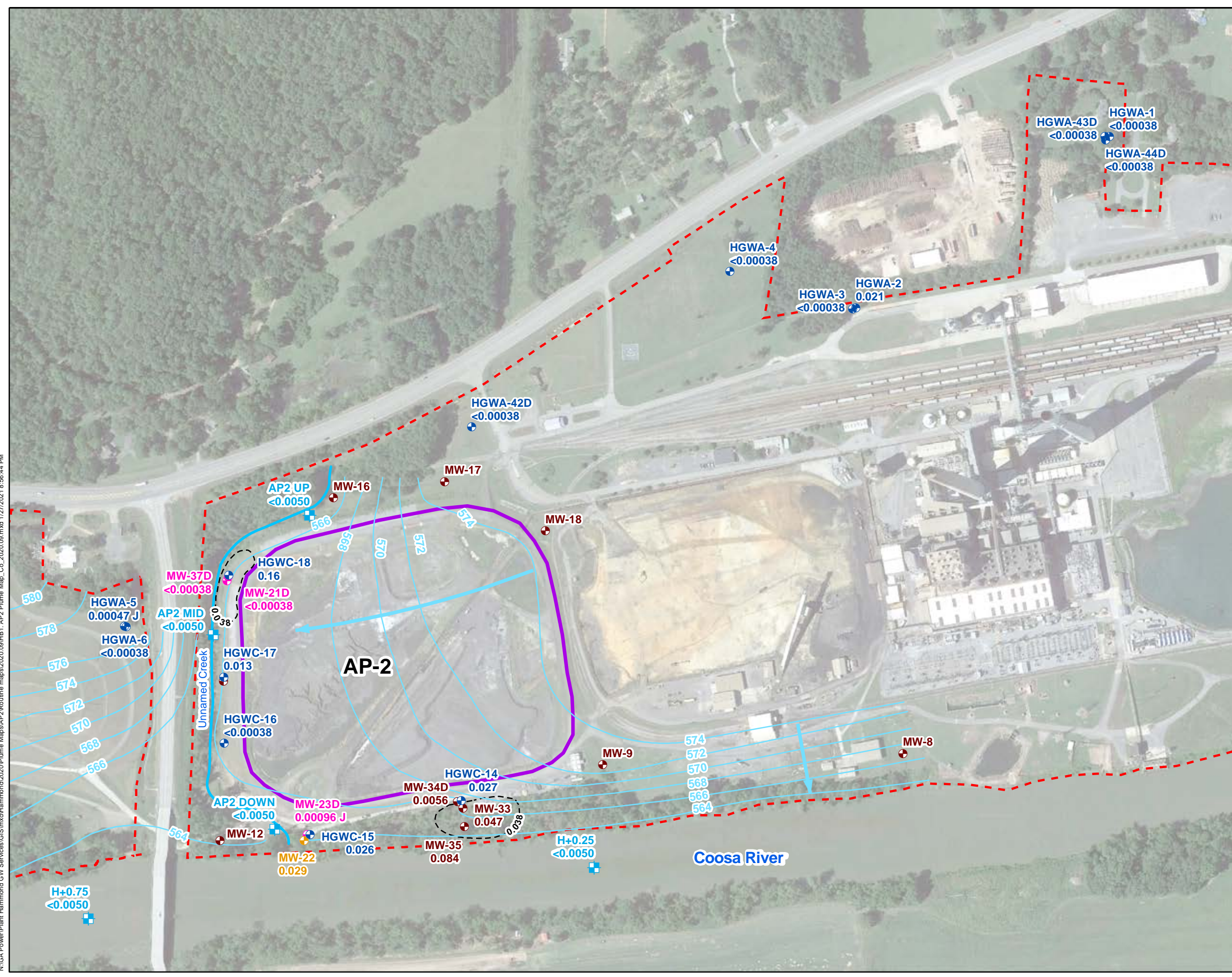
Prepared For:  Georgia Power

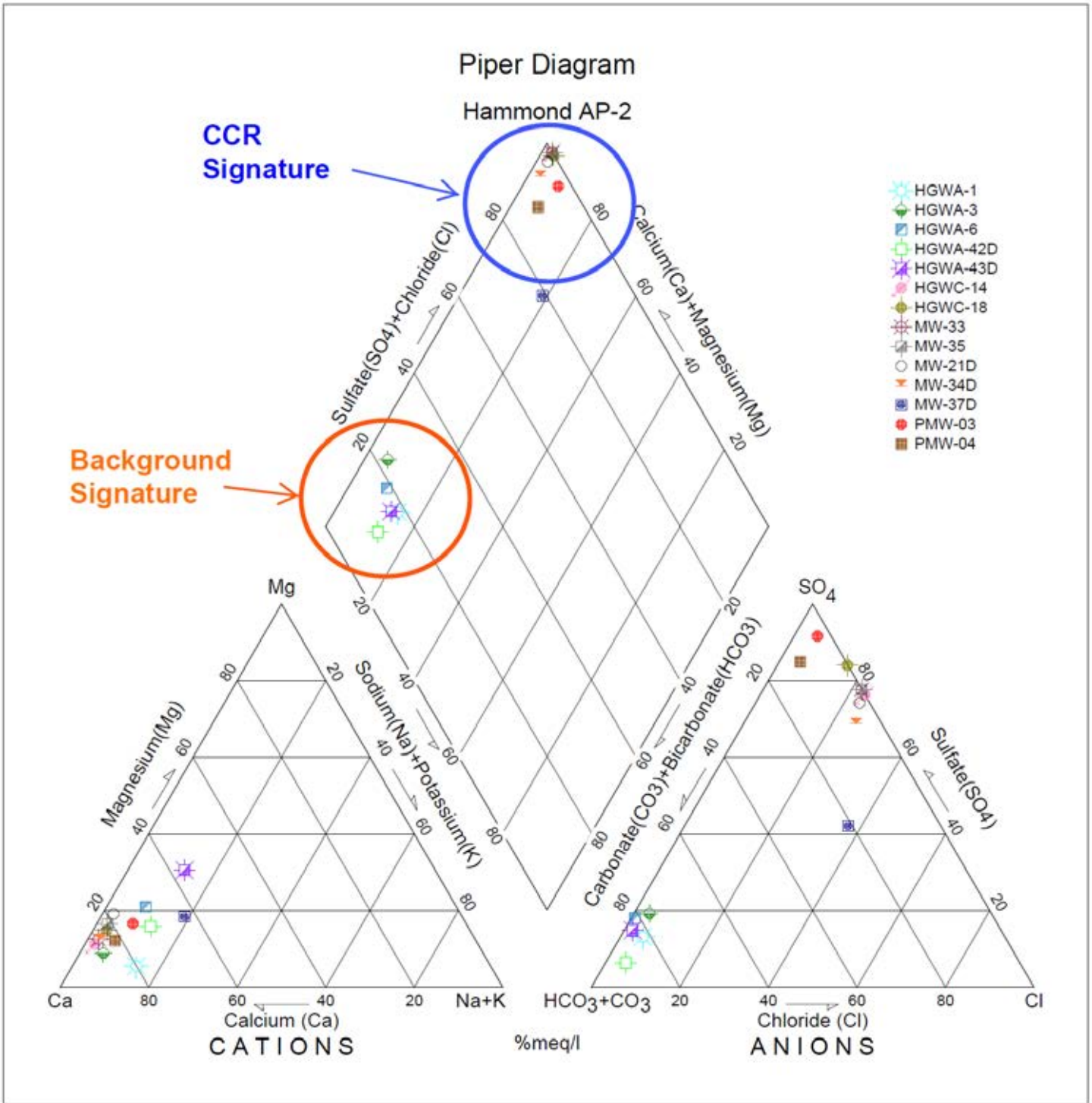
Prepared By:  Geosyntec
consultants

FIGURE
4

KENNESAW, GA JANUARY 2021

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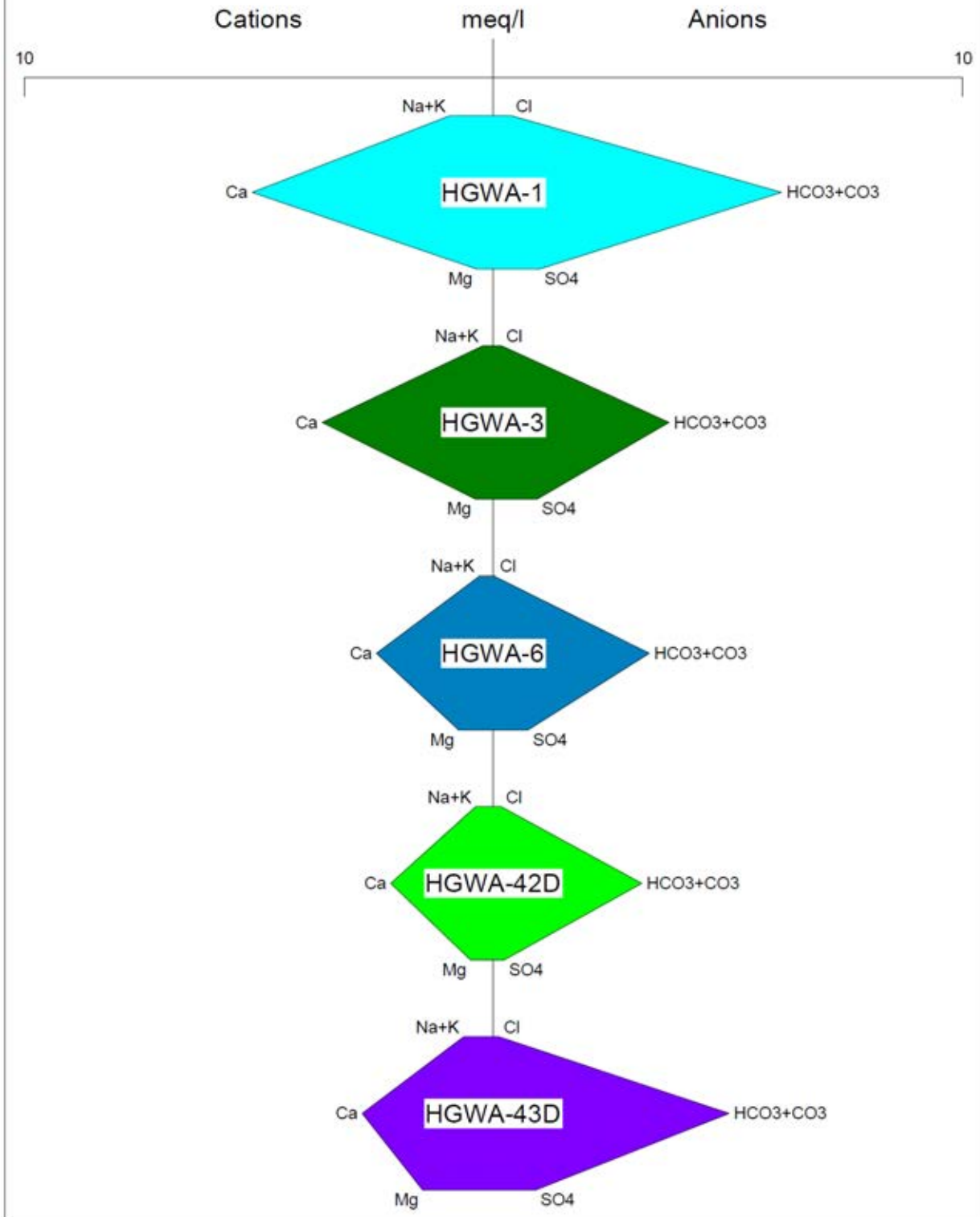
Sample Date						
HGWA-1	HGWA-3	HGWA-6	HGWA-42D	HGWA-43D	HGWC-14	HGWC-18
9/15/2020	9/15/2020	9/15/2020	9/17/2020	9/16/2020	9/18/2020	9/15/2020
MW-21D	MW-33	MW-34D	MW-35	MW-37D	PMW-03	PMW-04
9/21/2020	9/21/2020	9/23/2020	9/21/2020	9/23/2020	4/8/2020	4/10/2020

Piper Trilinear Plot

Georgia Power Company
Plant Hammond AP-2
Floyd County, Georgia

Prepared For:	Prepared By:	Figure
Georgia Power	Geosyntec consultants	
Kennesaw, GA	January 2021	5

Stiff Diagram Hammond AP-2



Sample Date				
HGWA-1	HGWA-3	HGWA-6	HGWA-42D	HGWA-43D
9/15/2020	9/15/2020	9/15/2020	9/17/2020	9/16/2020

Stiff Diagram – Background Wells

Georgia Power Company
Plant Hammond AP-2
Floyd County, Georgia

Prepared For:

Georgia Power

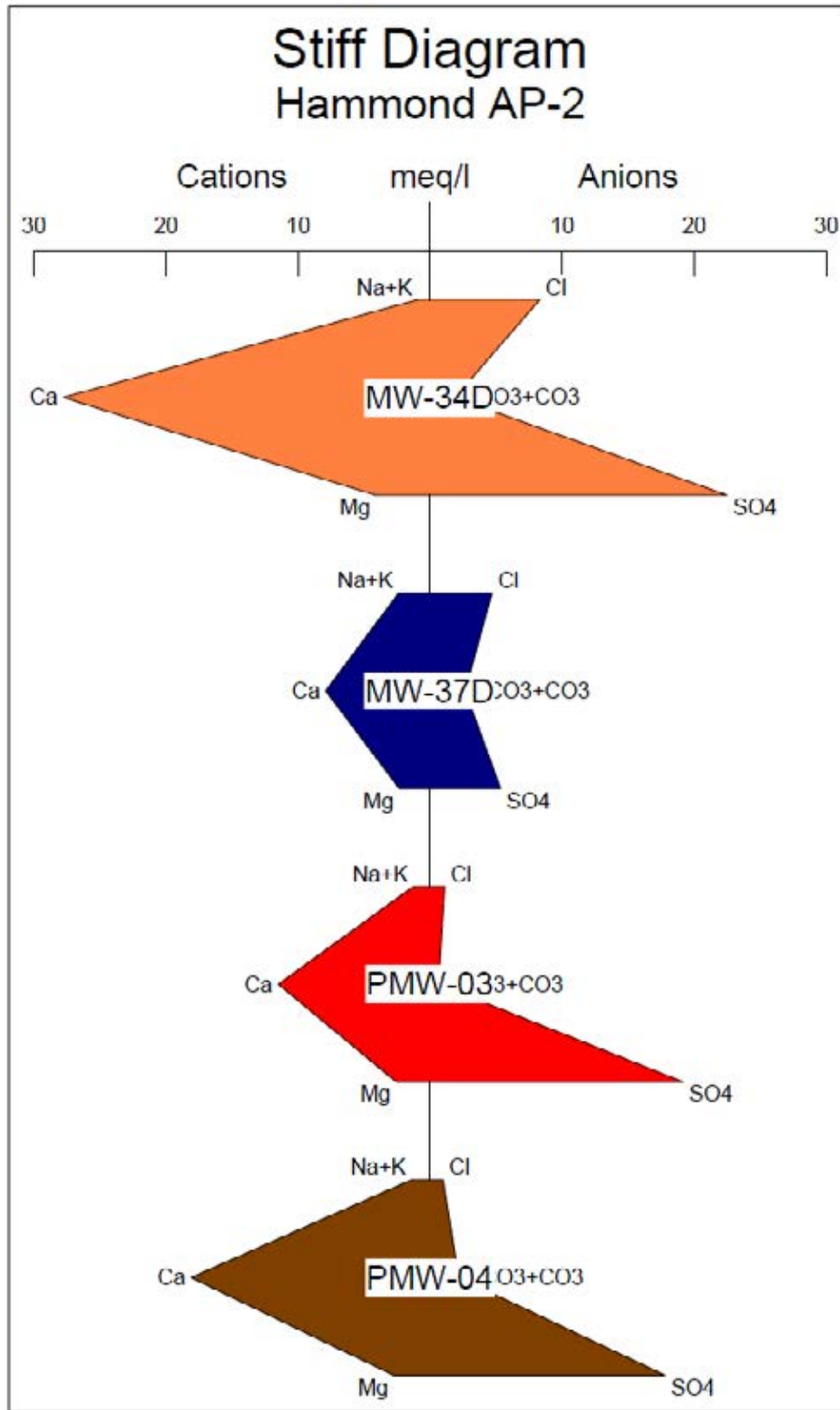
Prepared By:

Geosyntec[®]
consultants

Kennesaw, GA

January 2021

**Figure
6A**



Sample Date			
MW-34D	MW-37D	PMW-03	PMW-04
9/23/2020	9/23/2020	4/8/2020	4/10/2020

**Stiff Diagram – Delineation Wells &
AP-2 Pore Water Piezometers**
Georgia Power Company
Plant Hammond AP-2
Floyd County, Georgia

Prepared For:

Georgia Power

Kennesaw, GA

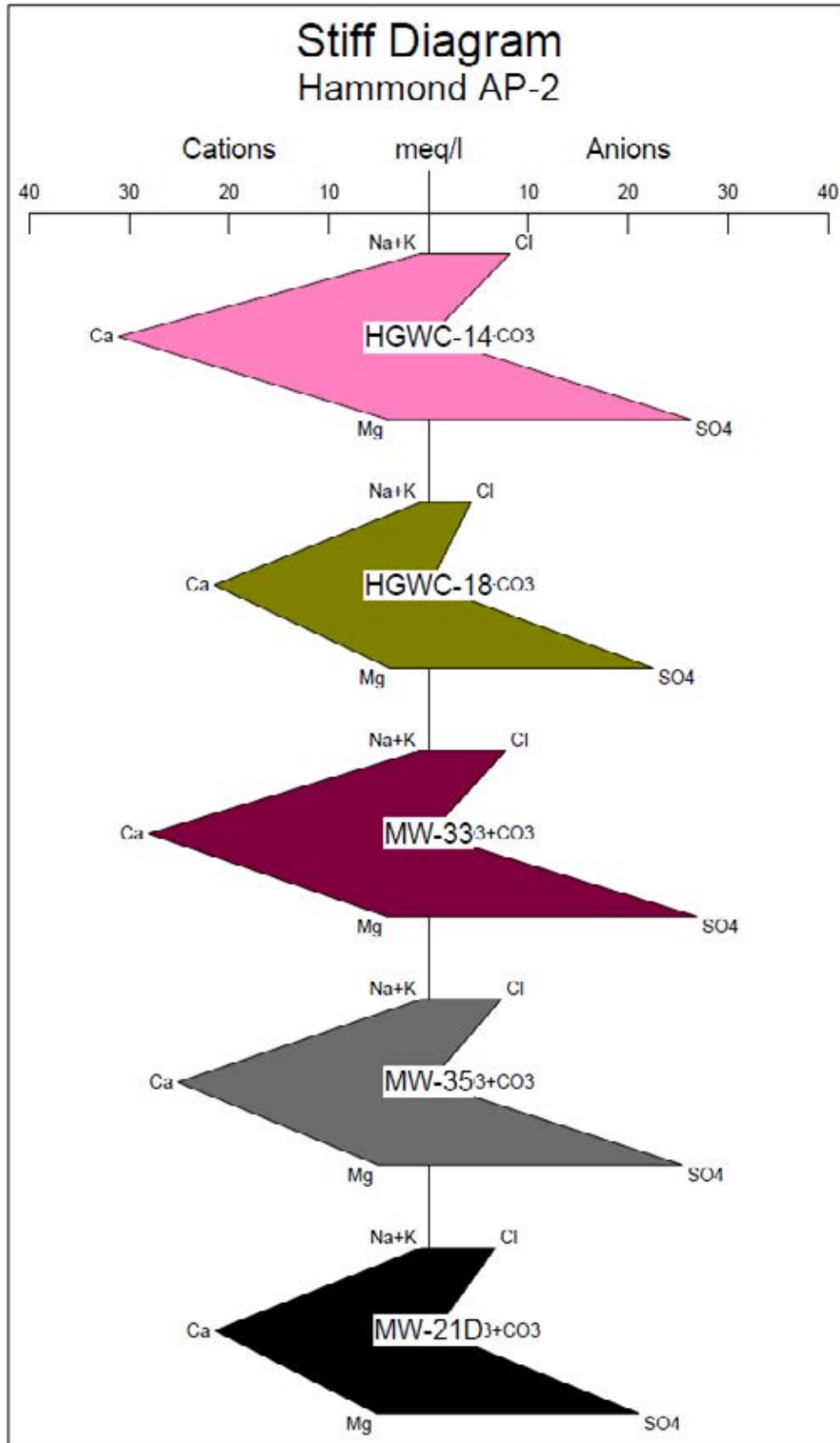
Prepared By:

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January 2021

Figure

6B



Sample Date				
HGWC-14	HGWC-18	MW-21D	MW-33	MW-35
9/18/2020	9/15/2020	9/21/2020	9/21/2020	9/21/2020

**Stiff Diagram – Compliance Wells,
Delineation Wells, & Piezometers**

Georgia Power Company
Plant Hammond AP-2
Floyd County, Georgia

Prepared For:

Georgia Power

Prepared By:

Geosyntec[®]
consultants

Kennesaw, GA

January 2021

Figure

6C

APPENDIX A

Risk Evaluation Report



RISK EVALUATION REPORT

PLANT HAMMOND

ASH POND 2

ROME, GEORGIA

Prepared for

Georgia Power

241 Ralph McGill Boulevard
Atlanta, Georgia 30308

Prepared by

Geosyntec Consultants, Inc.

1255 Roberts Blvd. Suite 200
Kennesaw, GA 30144

Project Number GZ7112H

January 2021

TABLE OF CONTENTS

EXECUTIVE SUMMARY	iv
1 Introduction	1
2 Basis And Background For The Development Of The Conceptual Exposure Model....	3
2.1 Site Description	3
2.1.1 Topography and Surface Hydrology	4
2.1.2 Geology and Hydrogeology	4
2.2 Potential Transport Pathways	5
2.3 Potential Exposure Pathways and Receptors.....	5
3 Risk Evaluation Screening	8
3.1 Data Used in Risk Evaluation Screening	8
3.1.1 Groundwater Data	8
3.1.2 Background Groundwater Quality	9
3.2 Groundwater Screening Evaluation.....	10
4 Refined Risk Evaluation.....	12
4.1 Refined Groundwater Risk Evaluation.....	12
4.1.1 Groundwater Exposure Point Calculation.....	12
4.1.2 COPI Concentration Trend Analysis	13
4.1.3 Refined Groundwater Risk Evaluation Results.....	13
4.2 Surface Water Screening Evaluation.....	14
4.2.4 Refined Risk Evaluation Summary and Conclusions	16
5 Uncertainty Assessment	17
6 Conclusions	19
7 References	20

TABLE OF CONTENTS (Continued)

LIST OF TABLES

Table 1	SSL-Related Constituents Groundwater Screening
Table 2	Groundwater Exposure Point Concentration Summary
Table 3	Downgradient Groundwater Refined Evaluation
Table 4	Surface Water Human Health Screening
Table 5	Freshwater Surface Water Ecological Screening

LIST OF FIGURES

Figure 1	Site Location
Figure 2	Site Layout and Monitoring Well Network Map
Figure 3	Potentiometric Surface Elevation Contours (March 19, 2020)
Figure 4	Conceptual Exposure Model
Figure 5	Off-Site Well Survey Results
Figure 6	Groundwater Risk Screening Approach
Figure 7	Monitoring Wells Used in Risk Screen
Figure 8	Refined Groundwater Risk Evaluation Approach
Figure 9	Surface Water Risk Screening Approach
Figure 10	Surface Water Sample Locations

LIST OF APPENDICES

Appendix A	Plant Hammond Well Survey (Off-Site)
Appendix B	Data Used in Risk Evaluation
Appendix B-1	Groundwater Dataset
Appendix B-2	Surface Water Dataset
Appendix C	USEPA RSL Calculator Generated Residential Screening Levels
Appendix D	Support for Refined Risk Evaluation
Appendix D-1	Exposure Point Concentration Calculation Results
Appendix D-2	Exposure Point Concentration Figures
Appendix D-3	ProUCL Input / Output Files
Appendix D-4	Groundwater Trend Graphs

LIST OF ACRONYMS AND ABBREVIATIONS

AP	Ash Pond
Bgs	below ground surface
CCR	Coal Combustion Residual
CEM	Conceptual Exposure Model
CFR	Code of Federal Regulations
COI	Constituent of Interest
COPI	Constituent of Potential Interest
EPC	Exposure Point Concentration
EPD	[Georgia] Environmental Protection Division
ft	feet
ft/day	feet per day
GWPS	Groundwater Protection Standard
HSRA	Hazardous Site Response Act
IRIS	Integrated Risk Information System
K	Hydraulic Conductivity
mg/L	Milligrams per liter
msl	mean sea level
ProUCL	ProUCL software version 5.1
PZ	Piezometer
RME	Reasonable Maximum Exposure
RRS	Risk Reduction Standards
RSL	Regional Screening Level
SSL	Statistically Significant Level
UCL	95 Percent Upper Confidence Limit of the Arithmetic Mean
USEPA	United States Environmental Protection Agency
VRP	Voluntary Remediation Program

EXECUTIVE SUMMARY

Georgia Power's Plant Hammond (site) is a former four-unit, coal-fired electric generating facility owned and operated by Georgia Power that was retired on July 29, 2019. The site is located along the Coosa River, approximately 10 miles west of Rome, Floyd County, Georgia. Coal combustion residual (CCR) material resulting from such power generation has historically been transferred and stored in four ash ponds (AP) AP-1, AP-2, AP-3, and AP-4 and the Huffaker Road Landfill in compliance with applicable regulations. This report focuses on AP-2.

AP-2 was constructed in 1969, and CCR sluicing and placement began upon its commission. AP-2 was used as a dewatering facility for fly ash and bottom ash. To support operations, dewatered ash was excavated and transported to the Huffaker Road Landfill, a permitted solid waste disposal facility owned and operated by Georgia Power and located approximately five miles northeast of Plant Hammond. Georgia Power will close AP-2 through removal of the CCR material from the unit. The CCR material will be disposed in a permitted landfill or transported off-site for beneficial use. AP-2 is subject to the Federal CCR Rule, 40 C.F.R. § 257, Subpart D (USEPA, 2020a) and the State CCR Rule, Ga. Comp. R. & Regs. 391-3-4-.10 (EPD, 2018a). Closure Permit No. 057-024D (CCR) (Closure Permit) was approved by Georgia Environmental Protection Division (EPD) on June 22, 2020. Semiannual groundwater monitoring and reporting is required for at least 5 years following CCR removal per AP-2's Closure Permit.

This report presents the results of a risk evaluation for CCR constituents¹ exhibiting statistically significant levels (SSLs) in groundwater at AP-2 from samples collected by Georgia Power in compliance with the Federal and State CCR Rules between 2016 and June 2020. A conservative, health-protective approach was used that is consistent with United States Environmental Protection Agency (USEPA) risk assessment guidance, Georgia EPD regulations and guidance, and standard practice for risk assessment in the State of Georgia. Cobalt and molybdenum were previously identified as SSL-related constituents based on groundwater protection standards (GWPS) established for AP-2 (Geosyntec, 2020a). Molybdenum is not an SSL-related constituent based on the federal GWPS established pursuant to 40 C.F.R. § 257.95(h)(2) and does not exceed health-based criteria in groundwater samples. USEPA revised the Federal CCR Rule on July 30, 2018, updating the GWPS for cobalt, lead, lithium, and molybdenum values (USEPA, 2018a). While the updated federal health-based GWPS are expected to govern molybdenum, it was identified as an SSL-related constituent using the background-based GWPS established for AP-2 pursuant to the State CCR Rule and, therefore, included in this risk evaluation. Cobalt is an SSL-related constituent based on the federal GWPS established pursuant to 40 C.F.R. § 257.95(h)(2).

¹ The constituents included in the risk evaluation also occur naturally in the site geologic setting.

Consistent with USEPA guidance, this risk evaluation used a tiered approach to evaluate potential risks, which included the following steps:

1. Development of a conceptual exposure model (CEM) for AP-2.
2. Initial groundwater risk screening: Compare groundwater concentrations for constituents exhibiting SSL concentrations to conservative, health-protective criteria and/or background concentrations to determine if any constituents pose a risk to human health.
3. Refined groundwater risk evaluation: Perform a more refined analysis of any Constituents of Potential Interest (COPIs) that were not screened out in the initial risk screening to assess whether they pose a potential risk to human health.
4. Surface water risk screening: For constituents identified as groundwater constituents of interest (COIs), comparison of surface water concentrations to conservative, health-protective criteria to assess whether they pose a potential risk to human health or the environment as an additional line of evidence.
5. Development of risk conclusions and identification of associated uncertainties.

Using this approach that includes multiple conservative assumptions, SSL-related constituents evaluated from AP-2 are not expected to pose a risk to human health or the environment; therefore, no further risk evaluation for groundwater or surface water is warranted. Compliance monitoring for AP-2 will continue pursuant to the requirements of the Federal and State CCR Rules. Georgia Power will proactively evaluate the data and update this evaluation, if necessary.

1 INTRODUCTION

This report summarizes a risk evaluation of AP-2 at Plant Hammond (site) located in Rome, Georgia (**Figure 1**). AP-2 is located on the west side of the site and is bounded to the west by an unnamed creek and to the south by the Coosa River. Georgia Power will close AP-2 through removal of the CCR material from the CCR unit. Closure activities will be conducted in accordance with the Federal and State CCR Rules and as described in the AP-2 Closure Permit which was approved by EPD on June 22, 2020.

This risk evaluation provides additional technical review of the human health and environmental protectiveness associated with the closure of AP-2 with respect to constituent concentrations in groundwater identified at SSLs above GWPS. The evaluation relies on a conservative, health-protective approach that is consistent with the risk approaches outlined in Voluntary Remediation Program (VRP) (Georgia Voluntary Remediation Act, O.C.G.A. § 12-8-100; EPD, 2009) and USEPA Regional Screening Levels (RSLs) User's Guide (USEPA, 2020b). This evaluation also incorporates principles and assumptions consistent with the Federal and State CCR Rules.

The risk evaluation includes the development of a site-specific CEM and a stepwise risk screening process for identified SSL-related constituents for AP-2. Cobalt was identified as an SSL-related constituent under the Federal and State CCR Rules in HGWC-18 while molybdenum was identified as an SSL-related constituent under the State CCR Rule in MW-21D (Geosyntec, 2020b).

The remainder of the report is organized as follows:

- ***Section 2, Basis and Background for the Development of the Conceptual Exposure Model*** – Presents site-specific information related to the site history, monitoring network, topography and surface hydrology, geology and hydrogeology, potential transport pathways, and receptors that could potentially be exposed to SSL-related constituents.
- ***Section 3, Groundwater Risk Evaluation Screening*** – Describes the process for the initial risk-based screening of SSL-related constituents to identify COPIs in groundwater.
- ***Section 4, Refined Risk Evaluation*** – Describes the process for refined evaluation of groundwater COPIs, including calculation of exposure point concentrations (EPCs) and analysis of concentration trends over time as well as the risk screening process for those constituents evaluated for surface water in the nearest adjacent downgradient surface water bodies.

- ***Section 5, Uncertainty Assessment*** – Describes the uncertainties associated with the risk screening process.
- ***Section 6, Conclusions*** – Presents the conclusions of the risk evaluation.
- ***Section 7, References*** – Provides reference information for the sources cited in this document.

2 BASIS AND BACKGROUND FOR THE DEVELOPMENT OF THE CONCEPTUAL EXPOSURE MODEL

This section provides a brief overview of the site location and operational history, site regulatory status, and geology/hydrogeology. A CEM representing the site-specific processes and conditions that are relevant to the potential migration of groundwater and potential exposure to SSL-related constituents has been developed based on a review and compilation of information previously presented in AP-2 documents, including the *Hydrogeologic Assessment Report (HAR) (Revision 01) for Ash Pond 2* (Geosyntec, 2019), *2019 Semiannual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 2* (Geosyntec, 2020b); *2020 Semiannual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 2* (Geosyntec, 2020c). The CEM includes a conservative evaluation of assumed potential transport pathways, potential exposure pathways, and potential human and ecological receptors.

2.1 Site Description

The site is located in Floyd County, Georgia, approximately 10 miles west of the city of Rome. The site occupies about 1,100 acres 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. A site location map and a detailed site map is included as **Figure 1**.

AP-2 was constructed in 1969, and CCR sluicing and placement began upon its commission. AP-2 was used as a dewatering facility for fly ash and bottom ash. To support operations, dewatered ash was excavated and transported to the Huffaker Road Landfill, a permitted solid waste disposal facility owned and operated by Georgia Power. Georgia Power will close AP-2 through removal of the CCR material from the unit; closure activities will be conducted in accordance with 40 C.F.R. § 257.102 and corresponding Georgia EPD Rule 391-3-4-.10(7)(b). The CCR material will be disposed of in a permitted landfill or transported off-site for beneficial use. AP-2's Closure Permit was approved by EPD on June 22, 2020. Details of the closure approach are provided in the Closure Permit. Semiannual groundwater monitoring and reporting is required for at least 5 years following CCR removal per AP-2's Closure Permit.

As detailed in the *2020 Semiannual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 2* (Geosyntec, 2020c), the groundwater monitoring network at AP-2 consists of 11 compliance wells for the upgradient and downgradient groundwater monitoring system at the site. Six of these wells (HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, and HGWA-6) are designated for monitoring of background conditions upgradient of the ash ponds, five compliance wells (HGWC-14, HGWC-15, HGWC-16, HGWC-17, and HGWC-18) are intended for monitoring of conditions downgradient of AP-2, and six piezometers (MW-8, MW-9, MW-12, MW-16, MW-17, and MW-18) have been installed for

groundwater elevation monitoring. As part of the assessment monitoring program, four additional groundwater delineation wells (MW-21D, MW-22, MW-23D, and MW-37D) and four piezometers (MW-33, MW-34D, MW-35, and MW-36D) have been installed since 2018 to characterize groundwater quality and flow conditions downgradient of AP-2.

The monitoring well network for AP-2 is shown on **Figure 2**. Based on the conceptual site model and the observed hydrogeologic conditions at the site, downgradient well locations are distributed along the southern and western perimeter of the site, in the direction of groundwater flow. Both background and downgradient wells are screened in the same water-bearing horizon along the zone of primary groundwater transport within the highly weathered bedrock and upper portion of the competent bedrock.

2.1.1 Topography and Surface Hydrology

AP-2 is located in the western portion of the Plant Hammond property. The area surrounding AP-2 slopes gently south towards the Coosa River and southwest towards the unnamed creek. Topographic relief across the site is approximately 30 feet (ft), with a natural topographic high at an elevation of nearly 600 ft above mean sea level (amsl) north of AP-2, and with a topographic low approximately 570 ft amsl south of AP-2 at the banks of the Coosa River (Geosyntec, 2019).

2.1.2 Geology and Hydrogeology

The following information is provided in the *2020 Semiannual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 2* (Geosyntec, 2020c).

The Site is located in the Valley and Ridge Physiographic Province of northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name. Geologic mapping performed at the Site by Petrologic Solutions, Inc. under the direction of Golder (Golder, 2018) indicates that AP-2 is underlain by the lower units of the Cambrian age Conasauga Formation, consisting of mostly calcareous shale. Based on review of subsurface investigations at AP-2, the bedrock was identified as predominantly calcareous shale and fissile black shale. AP-2 is underlain primarily by five lithologic units; (i) terrace alluvium, (ii) colluvium, (iii) residuum, (iv) partially weathered shale bedrock, and (v) unweathered shale bedrock.

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The uppermost aquifer at AP-2 is a regional groundwater aquifer that occurs primarily in the residuum and within the weathered and fractured bedrock. Based on observations of residuum soil types and horizontal conductivity values, the movement of groundwater in the soil can be characterized as low-to moderate permeability, porous media flow. The groundwater flow in the shallow underlying bedrock is

characterized as fracture flow, and due to the preponderance of shale beneath AP-2, is expected to be very low permeability. The regional groundwater flow direction is expected to be from north to south; however, the local flow direction beneath AP-2 is predominantly east to west with an additional southwesterly component.

The potentiometric surface contours provided in the 2020 *Semiannual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 2* are provided on **Figure 3**.

2.2 Potential Transport Pathways

A variety of geologic, hydrogeologic, and geochemical mechanisms can occur in the subsurface and serve to attenuate constituent concentrations in groundwater such as soil or rock characteristics, the local geology and hydrogeology, and the distance the groundwater must travel before reaching a potential receptor. A summary of the potential transport pathways is shown on the CEM in **Figure 4**.

The unnamed creek and the Coosa River abut AP-2 to the west and south, respectively. The surface water flow direction for the unnamed creek is south where it enters the Coosa River which flows from east to west. A conservative assumption for this assessment was made that groundwater from the site flows to either the unnamed creek or the Coosa River. In addition, for the purposes of this evaluation, both the unnamed creek and the Coosa River were assumed to represent a hydraulic discharge boundary for groundwater flow in the upper aquifer from the nearby region.

2.3 Potential Exposure Pathways and Receptors

The exposure pathways for groundwater assumed to be complete for purposes of this risk evaluation were used to identify potential receptors and estimate potential risk. The CEM (**Figure 4**) depicts the conservative potential exposure pathways and receptors included in the risk evaluation.

The following potential exposure pathways and receptors were considered:

- On-site industrial worker: The groundwater exposure pathway for the on-site industrial worker was considered incomplete because there are no wells on-site that are classified for use as potable wells.
- On-site construction worker: While there is a potential for limited exposure to groundwater by a future construction worker through dermal contact with on-site shallow groundwater during subsurface activities, future construction workers would be

expected to have little to no direct contact with on-site groundwater due to safety procedures outlined in their site-specific health and safety plans.

- On-site resident: The groundwater exposure pathway for on-site residents was considered incomplete because the site is zoned heavy-industrial and there is no residential use on-site under current site conditions and future residential use of the site is considered unlikely (Floyd County, 2019).
- Off-site industrial/construction worker: The potential for off-site worker exposure through direct contact with groundwater was addressed qualitatively through the evaluation of hypothetical off-site residential receptors. Health-protective screening levels for residential receptors would be more conservative than industrial and construction worker screening levels.
- Off-site resident: The groundwater exposure pathway for hypothetical off-site residential receptors was conservatively assumed to be potentially complete. Nearby zoning is Agricultural Residential with the exception of some Community Commercial zoning across Alabama Highway to the north of the site (Floyd County, 2019). An off-site well survey of potential groundwater wells within a three-mile radius of the site (AP-1, AP-2, AP-3, and AP-4) was conducted and consisted of reviewing federal, state, and county records and online sources, in addition to conducting a windshield survey of the area (Newfields, 2020). The off-site well survey is included as **Appendix A**. Results of the survey are presented on **Figure 5**. Hypothetical off-site residential receptors in the downgradient groundwater flow direction identified in the well survey are located on the opposite side of the unnamed creek or the Coosa River, which for the purpose of this risk evaluation were assumed to represent hydraulic discharge boundaries for groundwater downgradient of AP-2.

Concentrations of the SSL-related constituents in on-site groundwater monitoring wells and piezometers are either below health-protective screening levels in wells on-site and upgradient of surface water bodies at AP-2 (molybdenum) or were not detected (cobalt) above health-protective screening criteria in the adjacent downgradient surface water body (i.e., the unnamed creek). As a conservative measure, hypothetical off-site residential exposure to SSL-related constituents were evaluated using data collected from on-site groundwater wells between 2016 and June 2020 downgradient of AP-2. This comparison makes the conservative assumption that on-site groundwater may potentially migrate to off-site drinking water wells through advective transport in groundwater without any attenuation within the aquifer media through factors such as dilution, dispersion, or adsorption, and disregards the presence of the unnamed creek and the Coosa River which represent assumed hydraulic discharge boundaries for groundwater downgradient of AP-2. Accordingly, the risk evaluation screening assumed the hypothetical off-site residential receptor could be exposed by ingestion and

dermal contact with SSL-related constituents in groundwater through its use as a future potable water source.

- Recreational surface water receptor: The potentially complete surface water exposure pathway for hypothetical recreational receptors was addressed quantitatively through the evaluation of surface water data collected from the the unnamed creek in July 2020. The surface water risk evaluation conservatively assumed that hypothetical recreators' exposure included ingestion of aquatic organisms (mainly fish) and potential incidental ingestion and dermal contact with surface water by hypothetical adult and child recreational receptors.
- Ecological surface water receptors: The potential surface water exposure pathway for hypothetical ecological receptors was addressed quantitatively through the evaluation of surface water data collected from the unnamed creek in July 2020. Ecological receptors were assumed to be exposed to surface water through direct contact to surface water as well as through the food chain pathway.

3 RISK EVALUATION SCREENING

The CEM developed in Section 2 was used to identify the potentially completed exposure pathways to human and ecological receptors that should be considered in the risk evaluation. The initial step in the risk evaluation is the comparison of SSL-related constituent concentrations from groundwater samples collected between 2016 and June 2020 to relevant, health-protective levels or background. The approach used is consistent with the Georgia EPD regulations and guidance, USEPA guidance, and standard practice for risk assessment in the State of Georgia. The EPD allows for the evaluation of risk to support site-specific remedial approaches in programs such as the Voluntary Remediation Program (VRP) (EPD, 2009).

The initial risk evaluation screening was performed for the potential groundwater exposure pathway by comparing the concentrations of of SSL-related constituents in groundwater samples from wells determined to have SSL-related constituents to appropriate health-protective screening criteria and/or background. These criteria included the risk reduction standards (RRS) established under the Hazardous Site Response Act (HSRA) for drinking water for the protection of human health and the site-specific background levels. If the maximum concentration of an SSL-related constituent exceeded the screening criterion, the constituent was identified as a COPI for further evaluation in the refined risk evaluation. The methodology and screening criteria used were identified in accordance with regulatory guidance and standard risk assessment practices using an approach designed to conservatively overestimate possible exposures and risks, providing an additional level of confidence in the conclusions. The methodology is summarized on **Figure 6** and discussed in more detail below.

3.1 Data Used in Risk Evaluation Screening

This section provides information on the groundwater dataset used in the risk evaluation screening.

3.1.1 Groundwater Data

For the initial risk screening evaluation, groundwater data from samples collected between 2016 and June 2020 from the on-site wells that were identified to have SSL-related constituents were used in the risk screening evaluation for hypothetical off-site residential exposure.

The list of wells with SSL-related constituents is as follows:

Federal CCR Rule:

- Cobalt: HGWC-18

State CCR Rule:

- Cobalt: HGWC-18

- Molybdenum: MW-21D

The data for these wells were screened against the relevant health-protective screening criteria and/or background. The location of the wells with SSL-related constituents included in the risk screen are provided on **Figure 7**.

Groundwater data used in the risk evaluation screening were collected from the uppermost aquifer and are considered to be representative of groundwater conditions at the site. The groundwater dataset used in the risk evaluation is presented in **Appendix B-1**. Method detection limits for the groundwater datasets used in the risk evaluation were reviewed and confirmed to be less than the screening levels.

3.1.2 Background Groundwater Quality

Statistical analysis of groundwater monitoring data are performed at the site pursuant to §257.93-95 following the professional engineer (PE) certified Statistical Analysis Method Certification (October, 2017, revised January 2020) (Geosyntec, 2020d) and the Unified Guidance (USEPA, 2009) for AP-2; background values are routinely updated under the program. Six monitoring wells in the certified monitoring well network are designated as upgradient (background) locations for AP-2, including HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, and HGWA-6. The statistical analyses performed on the groundwater data were described most recently in the *2019 Annual Groundwater Monitoring & Corrective Action Report* (Geosyntec, 2020b); text from that document is presented below.

The Sanitas groundwater statistical software was used to perform the 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). Time series plots generated by Sanitas are used to identify suspected outliers, or extreme values that would result in limits that are not representative of the current background data population. Suspected outliers at all wells are 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. Background well data were updated following the Unified Guidance recommendation, evaluating recent background data using Tukey's box plot method for outliers and Sen's Slope/Mann-Kendall methods for potential trends.

3.2 Groundwater Screening Evaluation

The process of screening constituents detected in groundwater against human health screening levels for groundwater is discussed below and presented in **Figure 6**. The HSRA RRSs evaluated under the VRP approach presented herein include Type 2 (cobalt and molybdenum) RRS for off-site residential receptors. The Hazardous Site Response Act, Rule 391-3-19.07(1) notes that “[a]ll risk reduction standards will, when implemented, provide adequate protection of human health and the environment.” In addition, Rule 391-3-19.07(3) notes a corrective action, if needed, may be considered complete when “a site meets any or a combination of the applicable risk reduction standards described in Rule 391-3-19-.07.”

In accordance with industry standards and methodologies approved by the Georgia EPD, the screening level hierarchy for the SSL-related constituents is as follows:

- The higher of the Type 1 or Type 2 RRS for hypothetical off-site residential exposure, which are considered protective of human health for those constituents regulated under HSRA.
- In accordance with standard methodologies approved by the Georgia EPD and because RRS for cobalt and molybdenum have not already been established under HSRA, site-specific risk-based screening values were calculated using the default exposure factors for residential receptors and the methodology found in Appendix III of the HSRA rule (EPD, 2018b). Accordingly, the calculated screening values are equivalent to a Type 2 groundwater RRS protective of residential exposures. Toxicity values for cobalt and molybdenum used in the calculations were identified in the Integrated Risk Information System (IRIS) (USEPA, 2020c). The risk-based screening values were calculated using USEPA’s RSL calculator (USEPA, 2020b) assuming a target hazard quotient of 1, consistent with Georgia EPD guidance applicable in other contexts (EPD, 2018a). The calculations of the risk-based screening values for cobalt and molybdenum are presented in **Appendix C**. A site-specific screening level was used for molybdenum in the evaluation. As noted below, the site-specific background concentration was used for cobalt. Based on the foregoing, a site-specific screening level was used for molybdenum.
- If site-specific background concentrations are greater than the criteria described above, then the site-specific background concentration is used as the screening level in accordance with the CCR methodology for development of groundwater protection standards (USEPA, 2020a). Accordingly, in this evaluation, the background concentration was used as a screening level for cobalt.

In summation, based on the hierarchy above, groundwater data collected from the wells identified to have SSL-related constituents were compared to residential screening criteria for groundwater or the relevant background concentration.

Table 1 presents the maximum detected concentration of each SSL-related constituent, cobalt 0.22 milligrams per liter (mg/L) and molybdenum (0.045 mg/L), which was used to represent potential off-site groundwater quality for comparison to the selected screening levels, cobalt (0.038 mg/L) and molybdenum (0.1 mg/L), for hypothetical off-site residential receptors. As noted in **Table 1**, cobalt was detected at concentrations that exceeded its screening level and was retained for further evaluation in the refined risk evaluation. Since molybdenum detections were below its screening level, molybdenum was not retained as a COPI and a refined risk evaluation was not necessary.

4 REFINED RISK EVALUATION

A refined risk evaluation was conducted for the groundwater COPI (cobalt) that was detected at concentrations that exceeded the site-specific background value. The refined risk evaluation identified EPCs for cobalt in groundwater for the purposes of characterizing potential risk to human and ecological receptors. If the EPC is greater than the respective screening level, then the constituent is identified as having the potential for risk that warrants additional evaluation (e.g., performing a surface water evaluation). Cobalt was evaluated in the adjacent downgradient surface water body (i.e., the unnamed creek) because it was identified as a groundwater COI in the refined groundwater risk evaluation.

4.1 Refined Groundwater Risk Evaluation

Potential risk associated with exposure to cobalt by hypothetical off-site residential receptors was refined using the methodology described in the HSRA and Voluntary Remediation Program (VRP) guidance (EPD, 2018b; EPD, 2009) and is presented in the following section and on **Figure 8**.

For the refined risk evaluation, groundwater data from samples collected between 2016 and June 2020 from the on-site well (HGWC-18) that was identified to have an SSL-related constituent and downgradient monitoring wells/piezometers that represent groundwater flow in the same hydraulically downgradient direction were used to evaluate hypothetical off-site residential exposure.

As noted above, groundwater data used in the risk screening level evaluation were collected from the uppermost aquifer and are considered to be representative of groundwater conditions at the site. The groundwater dataset used in the refined risk evaluation is presented in **Appendix B-1**.

4.1.1 Groundwater Exposure Point Calculation

The refined risk evaluation for cobalt included the development of an EPC. The EPC is a conservative estimate of potential exposure that is selected to address uncertainty and variability in the dataset (USEPA, 2002). Consistent with the EPA recommended approach for groundwater EPCs (USEPA, 2014), 95 percent upper confidence limits of the arithmetic mean (UCLs) were calculated using USEPA ProUCL 5.1 software (ProUCL) (USEPA, 2016) and ProUCL user's guide (USEPA, 2015b).

For the refined risk evaluation, UCLs for the COPIs in groundwater were calculated for datasets with the following characteristics:

- UCL for the individual well with an SSL-related constituent;

- UCL based on combined data from the well(s) with an SSL-related constituent and other well(s)/piezometer(s) in the general vicinity to include additional downgradient monitoring well(s)/piezometer(s) that represent groundwater flow in the same hydraulically downgradient direction; and
- UCL based on the combined data from the farthest downgradient well(s)/piezometers(s) that are hydraulically downgradient of the well(s) with an SSL-related constituent.

Other assumptions made in the calculations of the UCLs include:

- Primary samples (no duplicates) were used to calculate EPCs as duplicate samples were analyzed for quality assurance purposes.
- If the calculated UCL exceeded the maximum detected concentration, then the maximum detected concentration was used as the EPC.

ProUCL software calculates multiple UCLs and provides a recommended UCL which was selected as the EPC. If there were multiple UCLs recommended by ProUCL, the maximum UCL value was selected as a conservative assumption. **Appendix D-1** provides a detailed summary of the UCLs calculated using the methods described above, and **Appendix D-2** presents figures showing the wells used in the calculation of the EPCs for the sole groundwater COPI. **Appendix D-3** provides the input and output files associated with the ProUCL software.

Table 2 summarizes the groundwater EPC selected for cobalt. This table shows the number of samples, the maximum detected concentration, the UCL recommended by ProUCL software, and the selected EPC.

4.1.2 COPI Concentration Trend Analysis

Concentration trends over time were evaluated as one line of evidence in the refined risk evaluation for cobalt. The Mann-Kendall trend test with an alpha value equal to 0.05 and the Theil-Sen line test were conducted on the data from HGWC-18 for cobalt to evaluate the trends in concentrations over time. The tests were conducted using the USEPA ProUCL 5.1 software (USEPA, 2016).

The Mann-Kendall results are presented on time series graphs in **Appendix D-4**. There are no statistical trends for cobalt concentrations over time in HGWC-18.

4.1.3 Refined Groundwater Risk Evaluation Results

Cobalt was identified as a groundwater COPI in the initial risk screening. In the refined risk evaluation, comparison of the calculated EPC to the screening level was used to identify

constituents of interest (COIs) that may pose a potential risk to hypothetical off-site residential receptors exposed through the potential use of groundwater as potable water. If the EPC from the farthest downgradient well(s) is greater than the respective screening level, then the constituent is identified as having the potential for risk that warrants additional evaluation (e.g., performing a surface water evaluation).

Cobalt was detected in 16 out of 16 groundwater samples in well HGWC-18 at concentrations that exceeded the groundwater screening level for hypothetical off-site residential receptors. For the refined risk evaluation, the following EPCs were calculated for cobalt using the monitoring wells shown in **Appendices D-1** and **D-2**:

- Data from HGWC-18 was used to determine if the UCL is less than the screening level (EPC Step 1 in **Appendix D-1**).
- Data from HGWC-18 and the downgradient monitoring well MW-21D were combined to represent groundwater exposure in the same hydrologically downgradient direction (EPC Step 2 in **Appendix D-1**).
- A third UCL was not calculated for the cobalt exceedance in HGWC-18. There is no well between the unnamed creek and HGWC-18, and therefore, a hydraulically downgradient well could not be used to represent groundwater downgradient of the exceedance.

Both the EPC Step 1 (0.19 mg/L) and the EPC Step 2 (0.21 mg/L) exceeded the applicable screening level.

Table 3 presents the results of the refined screening comparing the EPC Step 2 to the screening level. Cobalt was identified as a COI in groundwater and is further evaluated below.

4.2 Surface Water Screening Evaluation

A surface water screening evaluation was conducted for samples collected from the unnamed creek for the groundwater COI (cobalt) identified in the refined groundwater risk evaluation. The surface water screening process is discussed below and presented in **Figure 9**.

Both human and ecological receptors have the potential to come into contact with surface water. Routes of exposure include ingestion of aquatic organisms (mainly fish) and potential incidental ingestion and dermal contact with surface water by adult and child recreational receptors. Potential routes of exposure for ecological receptors include direct contact to surface water and ingestion by aquatic receptors.

4.2.1 Surface Water Data

Surface water data for cobalt were collected during a July 2020 sampling event at three locations in the unnamed creek. The surface water sample locations are shown on **Figure 10**. The surface water dataset used in the risk evaluation is presented in **Appendix B-2**.

4.2.2 Human Health Screening

The following hierarchy of sources was considered in the process of selecting the surface water human health screening value for cobalt:

- Georgia In-Stream Water Quality Criteria (ISWQC) for human health (EPD, 2015).
- National Ambient Water Quality Criteria (NAWQC) for human health protective through ingestion of water and organisms (USEPA, 2015b). For select constituents for which no numerical values for surface water are provided, USEPA (2015b) states that “EPA has issued an MCL [Maximum Contaminant Level] which may be more stringent” suggesting the use of the MCL for surface water screening. This is a conservative approach.
- In accordance with standard practice using methodologies approved by the Georgia EPD, the higher of the residential groundwater screening levels described in Section 3.2.2 was used for the remaining constituents due to lack of human health surface water screening levels for these constituents, which is a conservative approach.
- Maximum detected upstream concentration if the maximum upstream surface water concentration is greater than the surface water screening value. Upstream concentrations were not used in this evaluation.

The Type 2 RRS was used as a screening value for cobalt. It is worth noting that the site-specific use of drinking water screening levels for surface water exposure is a conservative approach likely to overestimate risk as domestic use of the unnamed creek surface water downgradient of the site for human receptors is an incomplete exposure pathway.

Cobalt was not detected in the surface water samples (<0.005 mg/L) and the reporting limit was below the surface water human health screening level (0.006 mg/L), as shown in **Table 4**. Therefore, cobalt was not retained as a human health COPI for further evaluation in surface water and is not expected to pose a risk to human health.

4.2.3 Ecological Screening

Surface water screening values for aquatic ecological receptors were selected from the following order of hierarchy for cobalt:

- Chronic freshwater Georgia ISWQC (EPD, 2015), when available.
- USEPA Region 4 chronic freshwater screening levels (USEPA, 2018b).
- Maximum detected upstream concentration if the maximum upstream surface water concentration is greater than the surface water screening value. Upstream concentrations were not used in this evaluation.

Because cobalt does not have chronic freshwater Georgia ISWQC for ecological receptors (EPD, 2015), USEPA Region 4 chronic freshwater screening levels for total concentrations (USEPA, 2018b) were used in the surface water ecological screening for aquatic ecological receptors.

Cobalt was not detected in the surface water samples (<0.005 mg/L) and the reporting limit was below the surface water human health screening level (0.019 mg/L), as shown in **Table 5**. Therefore, cobalt was not retained as a COPI for further evaluation in surface water and is not expected to pose a risk to ecological receptors.

4.2.4 Refined Risk Evaluation Summary and Conclusions

Detections of cobalt were reported at concentrations above the corresponding groundwater screening value. However, the results of the refined groundwater and surface water risk evaluations indicate the following:

- Cobalt was identified as a groundwater COI for hypothetical off-site residential receptors and was evaluated further in adjacent surface water in the unnamed creek for potential exposure to human and ecological receptors.
- Cobalt was not detected in surface water samples from the unnamed creek and the analytical reporting limits were below health-protective surface water screening criteria for human and ecological receptors. Therefore, cobalt was not retained as a COPI in surface water for further evaluation and is not expected to pose a risk to human health or ecological receptors.

Accordingly, based on the multiple lines of evidence and various conservative assumptions, further risk evaluation for groundwater and surface water is not warranted. Compliance monitoring under the Federal and State CCR Rules will continue.

5 UNCERTAINTY ASSESSMENT

USEPA guidance stresses the importance of providing an analysis of uncertainties so that risk managers are better informed when evaluating risk assessment conclusions (USEPA, 1989). The uncertainty assessment provides a better understanding of the key uncertainties that are most likely to affect the risk assessment results and conclusions.

The potential uncertainties associated with the risk evaluation are as follows:

Health-Protective Screening Criteria Uncertainties

- In accordance with standard methodologies approved by the Georgia EPD, an equivalent Type 2 risk-based value was selected as the screening criterion for molybdenum. Selection of the screening criteria is considered appropriate for risk quantification for AP-2. Georgia EPD Rule 391-3-19.07(1) notes that “[a]ll risk reduction standards will, when implemented, provide adequate protection of human health and the environment”. Thus, this approach is likely to overestimate risks for hypothetical off-site receptors.
- Screening criteria based on RRSs, including for molybdenum, represent the reasonable maximum exposure (RME), which are the highest exposures that are reasonably expected to occur at a site. The RME is defined as “*the highest exposure that is reasonably expected to occur at a site but that is still within the range of possible exposures*” (USEPA, 1989). USEPA (1989) states that the “*intent of the RME is to estimate a conservative exposure case (i.e., well above the average case) that is still within the range of possible exposures*”. Potential receptors will likely have lower exposures than those presented in this risk evaluation (i.e., a majority of the site concentrations will be less than the UCL), which overestimates potential exposure.

Exposure Uncertainties

- The maximum detected concentrations of cobalt and molybdenum were compared to conservative risk-based screening criteria to identify the COPIs. Use of the maximum detected concentration is consistent with standard practice; however, use of the maximum detected concentration for exposure likely overestimates potential risk.
- The constituents included in the risk evaluation may occur naturally in the site geologic setting. Although background concentrations were evaluated and used in the screening process, contributions to exposure and risk were assumed to be entirely CCR-related and natural background sources were not quantified. Thus, SSL concentration-related exposures were likely overestimated.

- Hypothetical off-site residential exposure was evaluated using on-site groundwater data from wells around the perimeter and downgradient of AP-2. This comparison makes the conservative assumption that on-site groundwater may potentially migrate to off-site drinking water wells through advective transport in groundwater, but without any attenuation within the aquifer media through factors such as dilution, dispersion, or adsorption. This assumption may overestimate potential exposure and risk to hypothetical off-site receptors.
- EPCs for metals in groundwater were assumed to be 100 percent bioavailable by ingestion and dermal contact. This assumption may tend to overestimate risk.
- An off-site well survey of potential groundwater wells within a three-mile radius of the site was conducted by NewFields in 2020 and consisted of reviewing publicly available federal, state, and county records as well as a windshield survey of the area (**Appendix A**). Geosyntec relied on the data collected by NewFields.
- The evaluation used on-site groundwater data to represent hypothetical off-site exposure, which is a conservative approach that likely results in overestimation of assumed exposure and assumed potential risk. Although off-site potable wells identified in the well survey were not included in the risk evaluation, the presence of these wells do not appear to impact the conclusions of the risk evaluation because concentrations of SSL-related constituents are either delineated in on-site groundwater or below health-protective screening levels in adjacent surface water.

Toxicity Uncertainties

- Toxicity factors used to calculate health-protective criteria are established at conservative levels to account for uncertainties and often result in criteria that are many times lower than the levels observed to cause effects in human or animal studies. Therefore, a screening level exceedance does not necessarily equate to an adverse effect.

6 CONCLUSIONS

This risk evaluation for the SSL-related constituents in groundwater at AP-2 was conducted using methods consistent with Georgia EPD and USEPA guidance and included multiple conservative assumptions. Based on this evaluation, constituents evaluated from AP-2 (cobalt and molybdenum) are not expected to pose a risk to human health or the environment.

Accordingly, no further risk evaluation of groundwater or surface water is warranted. Compliance monitoring for AP-2 under the Federal and State CCR Rules will continue. Georgia Power will proactively evaluate the data and update this evaluation, if necessary

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- USEPA, 2014. Determining Groundwater Exposure Point Concentrations, Supplemental Guidance. OSWER Directive 9283.1-42. February. Available at: <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236917>.
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- USEPA, 2020b. USEPA Regional Screening Levels and supporting online RSL Calculator. Revised November 2020. Available at: www.epa.gov/risk/regional-screening-levels-rsl-generic-tables.
- USEPA, 2020c. *Integrated Risk Information System (IRIS)*. National Center for Environmental Assessment. Available at: <https://www.epa.gov/iris>

TABLES

Table 1
SSL-Related Constituent Groundwater Screening
Plant Hammond AP-2 Risk Evaluation Report^[1]
Plant Hammond, Rome, GA

CCR Rule Designation	Constituent	CAS No.	Detection Frequency	Exceedance Frequency ^[2]	Maximum Concentration (mg/L)	Screening Level (mg/L)	Screening Level Source ^[3]	Site-Specific Background (mg/L)	COPI? (Y/N)	Rationale ^[4]
Appendix IV	Cobalt	7440-48-4	16 / 16	16 / 16	0.22	0.038	Background	0.038	Y	ASL
	Molybdenum	7439-98-7	6 / 6	0 / 6	0.045	0.10	Site-Specific	0.010	N	BSL

Notes:

[1] Evaluation includes 2016 to June 2020 groundwater analytical data from wells HGWC-18 (for cobalt) and MW-21D (for molybdenum).

[2] The exceedance frequency is based on the number of samples with detected concentrations that exceed the identified screening level.

[3] The screening levels are the maximum value from the following sources:

- Type 1 RRSs listed in HSRA Appendix III, Table 1 (HSRA-regulated substances only).
- Type 2 RRSs calculated using the EPA RSL calculator with default residential exposure factors listed in the RSL Users Guide (HSRA-regulated substances only).
- Site-Specific values calculated using the EPA RSL calculator with default residential exposure factors listed in the RSL Users Guide.
- EPA Maximum Contaminant Levels (MCLs).
- Site-specific background levels for cobalt were calculated as described in the document "*Statistical Analysis Method Certification, 40 CFR §257.93(f), Plant Hammond- Ash Pond 2 (AP-2)*" (Geosyntec, 2020c).

[4] Rationale for classification of constituent as a COPI or exclusion as a COPI:

- ASL = Above respective screening level
- BSL = Below respective screening level

Definitions:

Grey shading = Constituent concentration(s) exceeded its respective screening level in the dataset.

CAS = Chemical Abstract Service

CCR = Coal Combustion Residuals

COPI = Constituent of Potential Interest

EPA = United States Environmental Protection Agency

GA EPD= Georgia Environmental Protection Division

GWPS = Groundwater Protection Standard

HSRA = [GA EPD] Hazardous Site Response Act

mg/L = milligram(s) per liter

RRS = [GA EPD] Risk Reduction Standard

RSL = [EPA] Regional Screening Level

Table 2
Groundwater Exposure Point Concentration Summary
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

CCR Rule Designation	Constituent	CAS No.	Detection Frequency ^[1]	Maximum Concentration (mg/L)	Wells Included in 95% UCL Calculation	95% UCL ^[1,2] (mg/L)	Recommended UCL Method	Selected EPC (mg/L)
Appendix IV	Cobalt	7440-48-4	17 / 22	0.22	HGWC-18 and MW-21D	0.21	95% Chebyshev UCL	0.21

Notes:

[1] EPCs calculated in accordance with USEPA, 2014. Memorandum for Determining Groundwater Exposure Point Concentrations, Supplemental Guidance. OSWER Directive 9283.1-42, February 2014. Located at: <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236917>. For further detail on the selected EPC, refer to Appendix D-1.

[2] NA = Not available. The 95% upper confidence limit on the mean (UCL) was not calculated because the dataset had fewer than 5 values.

Definitions:

CAS = Chemical Abstract Service

CCR = Coal Combustion Residuals

COPI = Constituent of Potential Interest

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

Table 3
Downgradient Groundwater Refined Evaluation
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

CCR Rule Designation	Constituent	CAS No.	Detection Frequency	Exceedance Frequency ^[1]	Selected EPC (mg/L)	Screening Level (mg/L)	SL Source ^[2]	Site-Specific Background (mg/L)	COI? (Y/N)	Rationale ^[3]
Appendix IV	Cobalt	7440-48-4	17 / 22	16 / 22	0.21	0.038	Background	0.038	Y	ASL

Notes:

[1] The exceedance frequency is based on the number of samples with detected concentrations that exceed the identified screening level.

[2] The screening values are the maximum value from the following sources:

- Type 1 RRSs listed in HSRA Appendix III, Table 1 (HSRA-regulated substances only).
- Type 2 RRSs calculated using the USEPA RSL calculator with default residential exposure factor listed in the RSL Users Guide (HSRA-regulated substances only).
- Site-Specific values calculated using the USEPA RSL calculator with default residential exposure factor listed in the RSL Users Guide.
- Site-specific background levels for each constituent were calculated as described in the document "*Statistical Analysis Method Certification, 40 CFR §257.93(f), Plant Hammond - Ash Pond 2 (AP-2)*" (Georgia Power Company, 2020).

[3] Rationale for classification of constituent as a COI:

- ASL = Above respective screening level
- BSL = Below respective screening level
- ND/BSL = Non-detect and below respective screening level

Definitions:

Grey shading indicates that the constituent is a COI in groundwater

CAS = Chemical Abstract Service

CCR = Coal Combustion Residuals

COI = Constituent of Interest

EPA = United States Environmental Protection Agency

GA EPD= Georgia Environmental Protection Division

HSRA = [GA EPD] Hazardous Site Response Act

mg/L = milligram(s) per liter

RRS = [GA EPD] Risk Reduction Standard

RSL = [EPA] Regional Screening Level

Table 4
Surface Water Human Health Screening
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

CCR Rule Designation	Constituents	CAS No.	Detection Frequency ^[1]	Exceedance Frequency ^[2]	Maximum Concentration ^[3] (mg/L)	Screening Level ^[4] (mg/L)	Screening Level Source ^[4]	Site-Specific Background ^[5] (mg/L)	COPI? (Y/N)	Rationale ^[6]
Appendix IV	Cobalt	7440-48-4	0 / 2	0 / 2	<0.005	0.006	Type 2 RRS	<0.005	N	ND/BSL

Notes:

[1] Evaluation includes July 2020 surface water analytical data from the unnamed creek (AP-2 MID and AP-2 Down).

[2] Selected exceedance frequency is for the specific constituent that exceeds the screening level presented in the table.

[3] Maximum detected concentration of total (unfiltered) results. Selected screening levels for COPIs are applicable to total results; therefore, no total-to-dissolved conversion was necessary for this evaluation.

[4] Screening levels were selected from the sources listed below, in the order of preference in which they are listed. If site-specific surface water background concentrations are greater than other applicable screening values, the site-specific background value is used for screening.

1. GA ISWQC = Georgia Instream Water Quality Criteria

2. NRWQC = National Recommended Water Quality Criteria

3. The maximum drinking water screening values from the following sources:

- Type 1 RRS for drinking water listed in HSRA Appendix III, Table 1 (HSRA-regulated substances only).

- Type 2 RRS for drinking water that are calculated by the EPA RSL calculator with exposure factors inputs from HSRA Appendix III.

- Site-Specific values calculated using the EPA Regional Screening Level (RSL) calculator with default residential exposure factor listed in the RSL Users Guide.

- EPA Maximum Contaminant Levels (MCLs).

[5] The site-specific background value is either the maximum detected concentration or maximum reporting limit in the unnamed creek upstream sample (AP-2 UP) collected in July 2020.

[6] Rationale for classification of constituent as a COPI or exclusion as a COPI:

ASL = Above respective screening level

BSL = Below respective screening level

ND/BSL = Non-detect and below respective screening level

Definitions:

CAS = Chemical Abstract Service

CCR = Coal Combustion Residuals

COPI = Constituent of Potential Interest

EPA = United States Environmental Protection Agency

GA EPD= Georgia Environmental Protection Division

HSRA = [GA EPD] Hazardous Site Response Act

mg/L = milligram(s) per liter

ND = not detected

RRS = [GA EPD] Risk Reduction Standard

Table 5
Freshwater Surface Water Ecological Screening
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

CCR Rule Designation	Constituents	CAS No.	Detection Frequency ^[1]	Exceedance Frequency ^[2]	Maximum Concentration ^[3] (mg/L)	Screening Level ^[4]		Hardness Dependent? (Y/N)	Screening Level Source ^[4]	Site-Specific Background ^[5] (mg/L)	COPI? (Y/N)	Rationale ^[6]
						Total	Dissolved (mg/L)					
Appendix IV	Cobalt	7440-48-4	0 / 2	0 / 2	<0.005	0.019	--	N	EPA Reg. 4	<0.005	N	ND/BSL

Notes:
[1] Evaluation includes July 2020 surface water analytical data from the unnamed creek (AP-2 MID and AP-2 Down).
[2] Selected exceedance frequency is for the specific constituent that exceeds the screening level presented in the table.
[3] Maximum detected concentration of total (unfiltered) results. Selected screening levels for COPIs are applicable to total results; therefore, no total-to-dissolved conversion was necessary for this evaluation.

[4] Screening levels were selected from the sources listed below, in the order of preference in which they are listed. If site-specific surface water background concentrations are greater than other applicable screening values, the site-specific background value is used for screening.

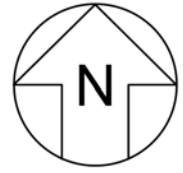
1. Georgia Instream Water Quality Criteria (GA ISWQC) from GA Administrative Code 391-3-6-.0 (5)(e)(iii).
2. EPA Region 4 screening values are from Table 1a of the Region 4 Ecological Risk Assessment Supplemental Guidance (EPA, 2018).

[5] The site-specific background value is either the maximum detected concentration or maximum reporting limit in the unnamed creek upstream sample (AP-2 UP) collected in July 2020.

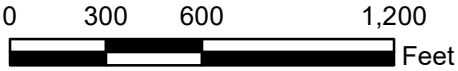
[6] Rationale for classification of constituent as a COPI or exclusion as a COPI:
ASL = Above respective screening level
BSL = Below respective screening level
ND/BSL = Non-detect and below respective screening level

Definitions:
-- = Not applicable
CAS = Chemical Abstract Service
CCR = Coal Combustion Residuals
COPI = Constituent of Potential Interest
EPA = United States Environmental Protection Agency
mg/L = milligram(s) per liter

FIGURES



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



SITE LOCATION

GEORGIA POWER
PLANT HAMMOND AP-2
FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

KENNESAW, GA DECEMBER 2020

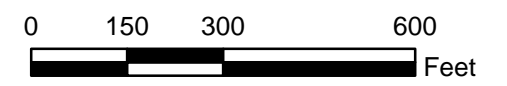
**FIGURE
1**



- LEGEND**
- Compliance Monitoring Well
 - Horizontal Delineation Well
 - Vertical Delineation Well
 - Piezometer
 - Surface Water Level Gauge Point
 - Surface Water Sample Point



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



SITE LAYOUT AND MONITORING WELL NETWORK

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

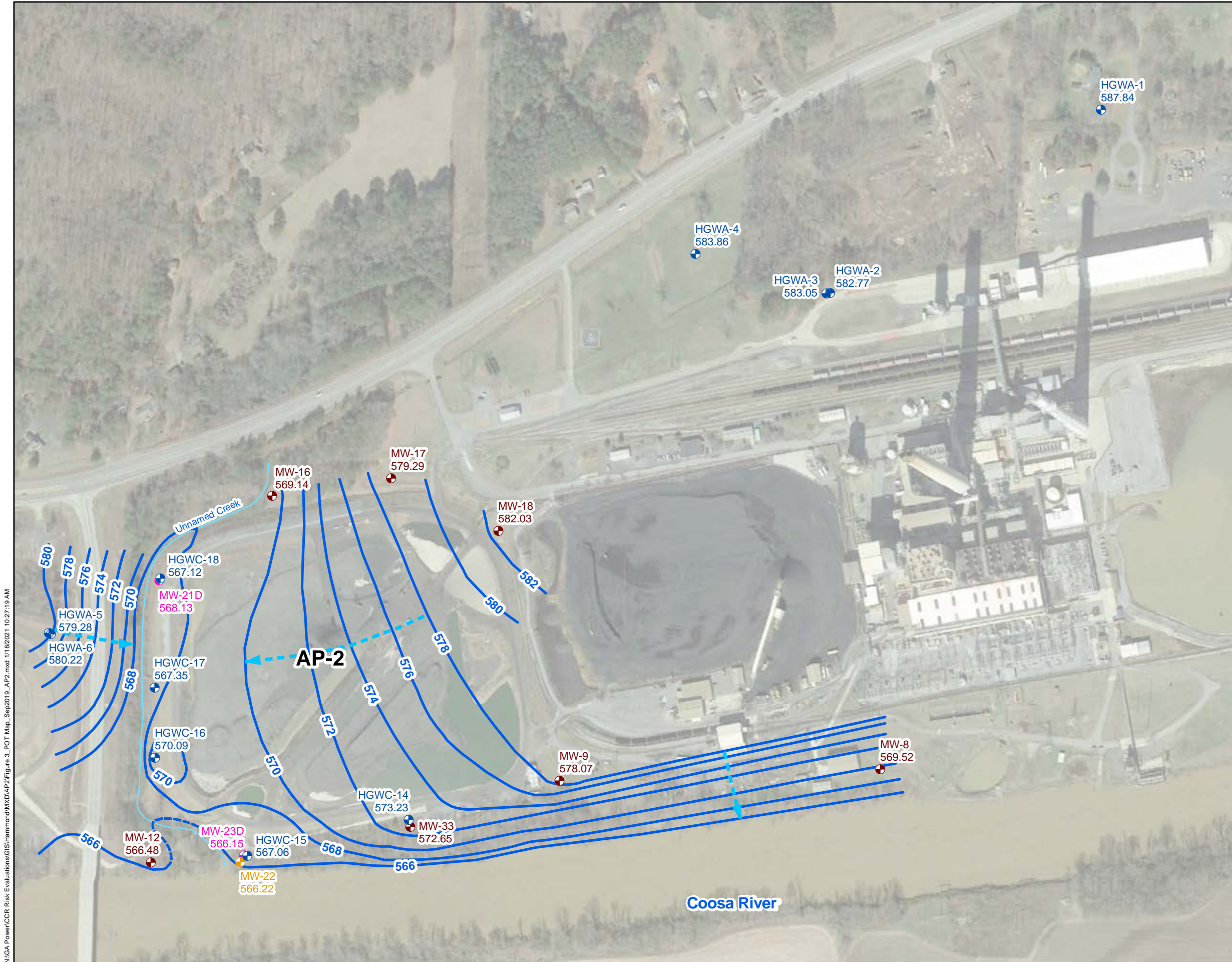
Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA JANUARY 2021

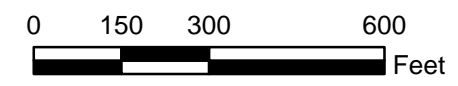
FIGURE 2

\\are-01\proj1\GA Power\CCFR Risk Evaluations\GIS\Hammond\MD\AP2\Figure 2_WellMap.mxd 1/27/2021 5:15:06 PM



- LEGEND**
- Compliance Monitoring Well
 - Horizontal Delineation Monitoring Well
 - Vertical Delineation Monitoring Well
 - Piezometer
 - Groundwater Elevation Iso-Contour (inferred where dashed)
 - ▶ Approximate Groundwater Flow Direction
 - Unnamed Creek

- Notes:**
1. Water level elevation recorded on March 19, 2020. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88.
 2. Water elevations in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
 3. Aerial photograph source: Google Earth Pro, February 2018.



**POTENTIOMETRIC SURFACE
ELEVATION CONTOURS
(MARCH 19, 2020)**
GEORGIA POWER
PLANT HAMMOND AP-2
ROME, FLOYD COUNTY, GEORGIA

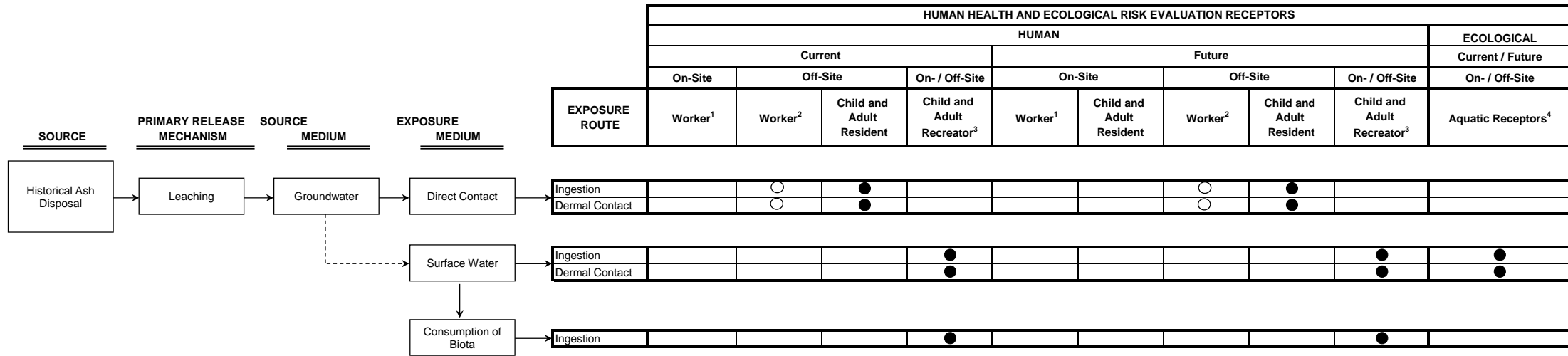
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA JANUARY 2021

**FIGURE
3**

N:\GA Power\CCR Risk Evaluations\GIS\Hammond\MDAP2\Figure_3_POT_Map_Sep2019_AP2.mxd 1/18/2021 10:27:19 AM



Legend

-----> A conservative assumption for this assessment was made that groundwater from the site flows to the downgradient surface water.

● Indicates potentially complete pathway to receptors, which are evaluated quantitatively.

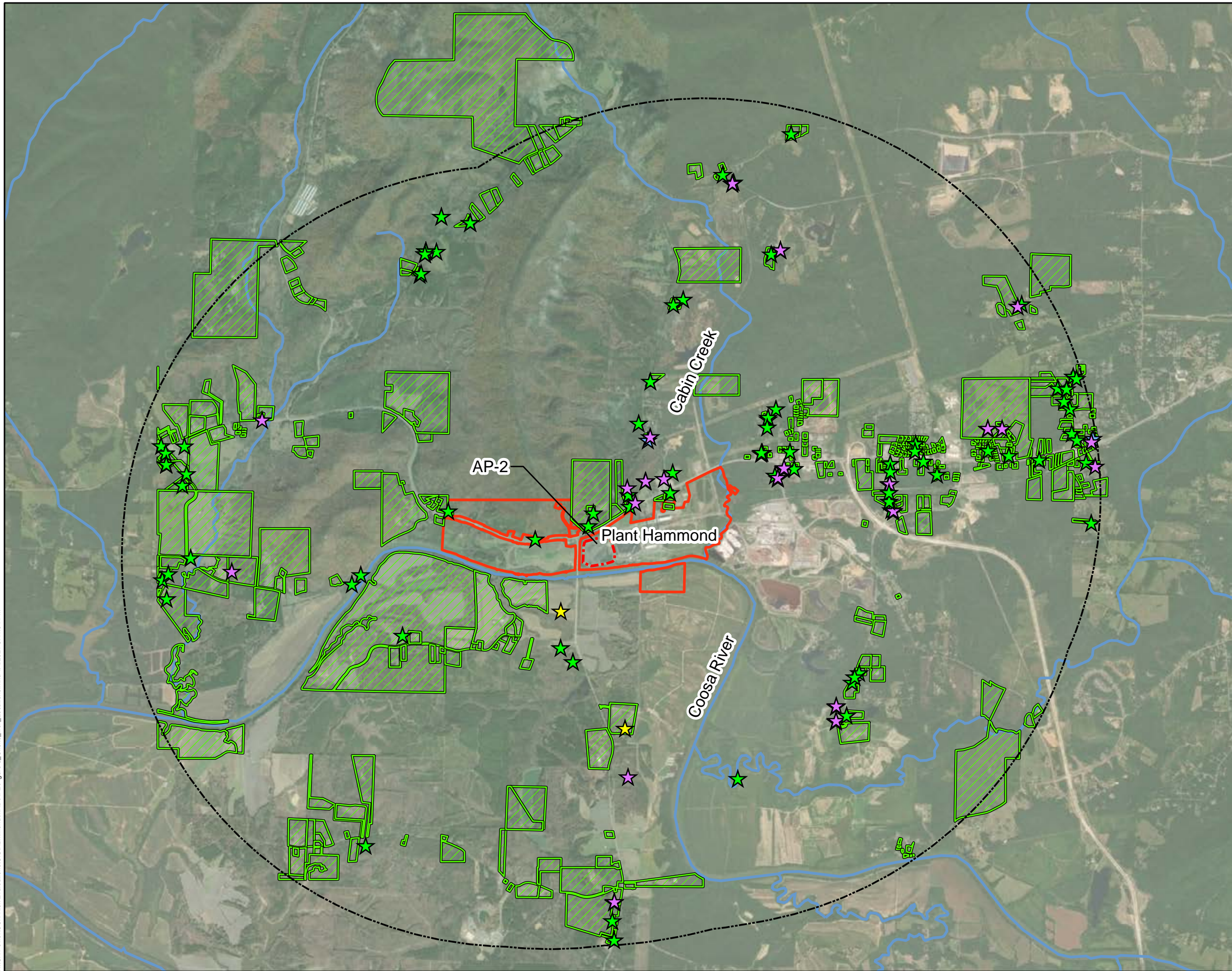
○ Indicates potentially complete pathway to receptors, which are evaluated qualitatively.

Footnotes

1. Industrial worker was considered to have no complete pathways because there are no wells on-site that are classified for use as potable wells. On-site construction workers would be expected to have little to no direct contact with on-site groundwater due to safety procedures outlined in their site-specific health and safety plans.
2. Off-site industrial/construction worker addressed through the evaluation of hypothetical off-site residential receptors as health-protective screening levels for residential receptors would be more conservative than industrial and construction worker screening levels.
3. Data from surface water samples collected in the unnamed creek were used to evaluate potential recreators.
4. Generalized receptor for ecological health risk evaluation.

Conceptual Exposure Model Georgia Power Company Plant Hammond AP-2	
	Figure 4
Kennesaw, GA	January 2021

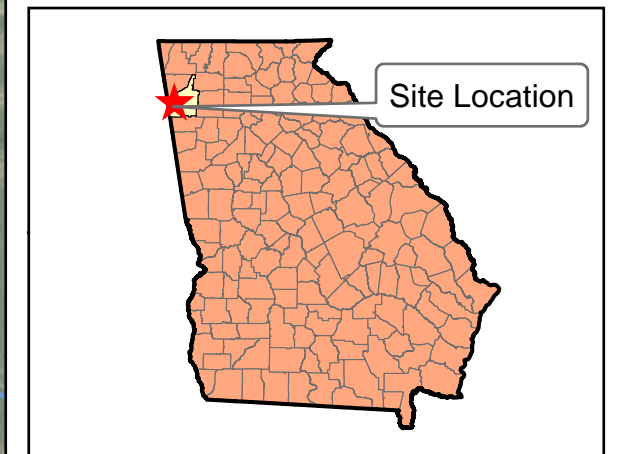
N:\GA Power\ACCR Risk Evaluations\GIS\Hammond\MDAP2\Figure 5_Offsite_well_Locations.mxd 1/4/2021 3:41:04 PM



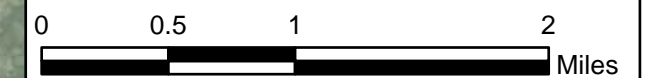
LEGEND

Off Site Wells

- Industrial Well
- Monitoring Well
- Private Drinking Well
- Private Irrigation Well
- River or Stream
- 3-Mile Radius
- Parcel Identified as Likely Having Well
- Approximate AP-2 Boundary
- Approximate Plant Hammond Site Boundary



Notes:
1. Aerial photograph source: ESRI World Imagery - Maxar, October 2017.



OFF-SITE WELL SURVEY RESULTS

GEORGIA POWER
PLANT HAMMOND AP-1
FLOYD COUNTY, GEORGIA

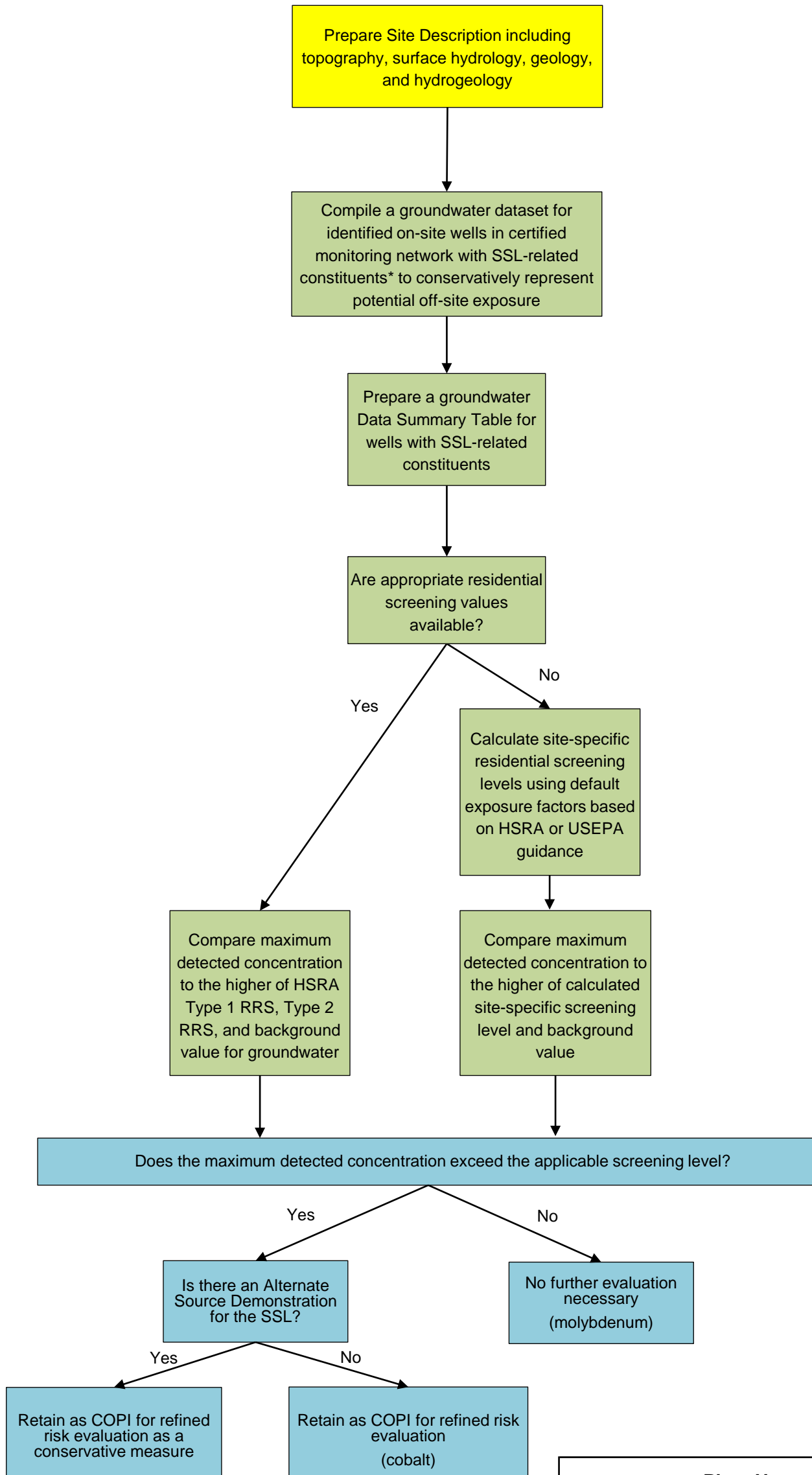
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

FIGURE
5

KENNESAW, GA JANUARY 2021

IRisk Screening Approach (Groundwater) for AP-2



Notes:

- Initial screen evaluates HGWC-18 (cobalt) and MW-21D (molybdenum) at AP-2
- SSL = Statistically Significant Level
- COPI = Constituent of Potential Interest
- HSRA = Hazardous Site Response Act
- RRS = Risk Reduction Standard
- USEPA = United States Environmental Protection Agency



**Plant Hammond AP-2
Initial Groundwater Risk Screening Approach**

Figure 6

Project Number: GZ7112H

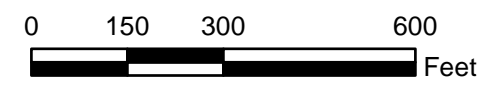
January 2021



- LEGEND**
-  State CCR Rule SSL-Related Constituent for Molybdenum
 -  Federal and State CCR Rules SSL-Related Constituent for Cobalt



- Note:
1. Cobalt Federal and State CCR Rules SSL-Related Constituent: HGWC-18
 2. Molybdenum State CCR Rules SSL-Related Constituent: MW-21D
 3. Aerial photograph source: Google Earth Pro, February 2018.



**MONITORING WELL
USED IN RISK SCREEN**

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

Prepared For:  Georgia Power

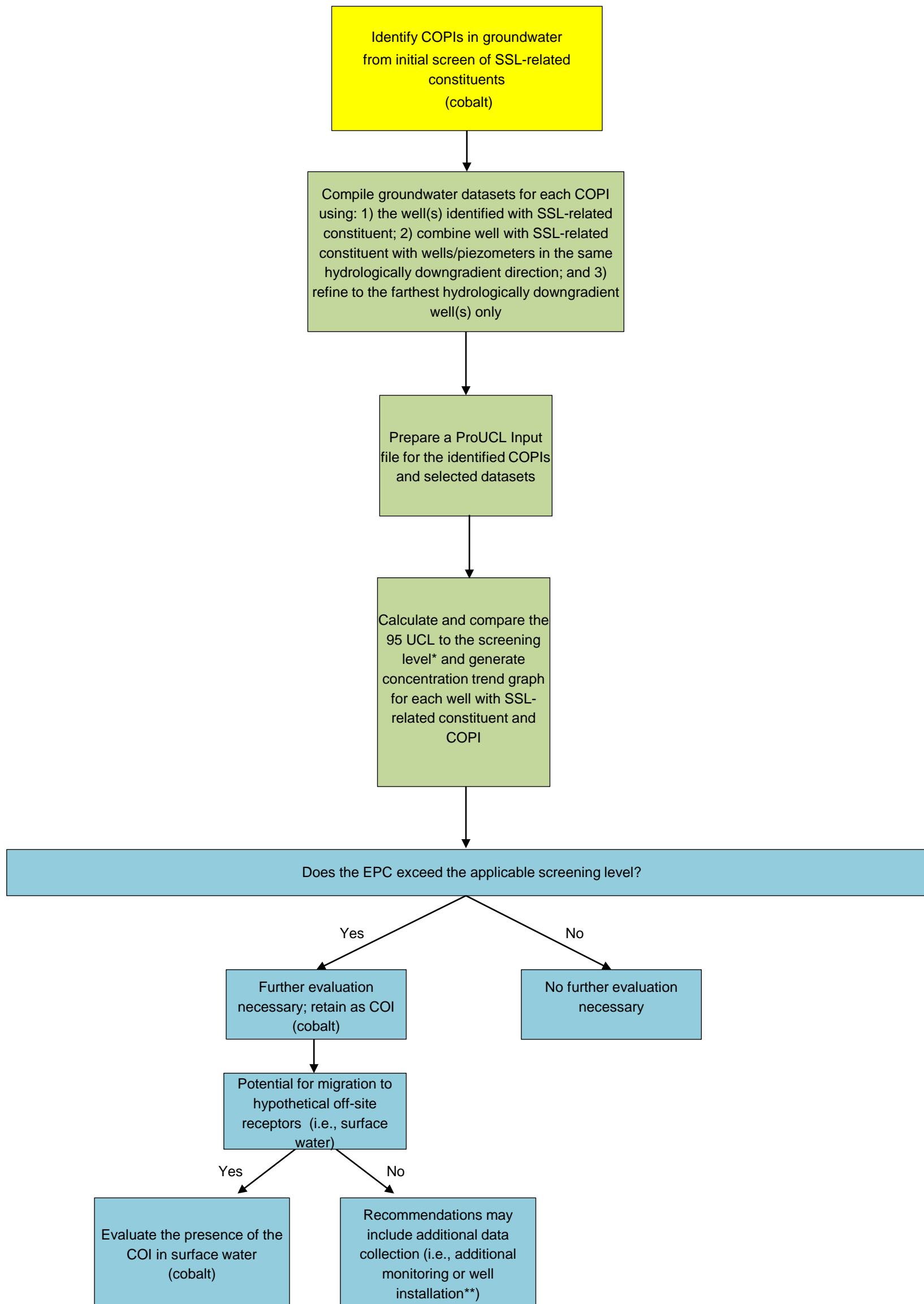
Prepared By: 

KENNESAW, GA JANUARY 2021

**FIGURE
7**

N:\GA Power\CCR Risk Evaluations\GIS\Hammond\MDAP2\Figure 7_Monitoring Wells Used in Risk Screen.mxd 1/4/2021 4:24:44 PM

Approach for Refined Risk Evaluation (Groundwater) for AP-2



Notes:

*If the 95 UCL exceeds the maximum concentration, use the maximum as the EPC.

**This step is not necessary for Hammond AP-2.

SSL = Statistically Significant Level

COPI = Constituent of Potential Interest

EPC = Exposure Point Concentration

UCL = Upper Confidence Limit

COI = Constituent of Interest

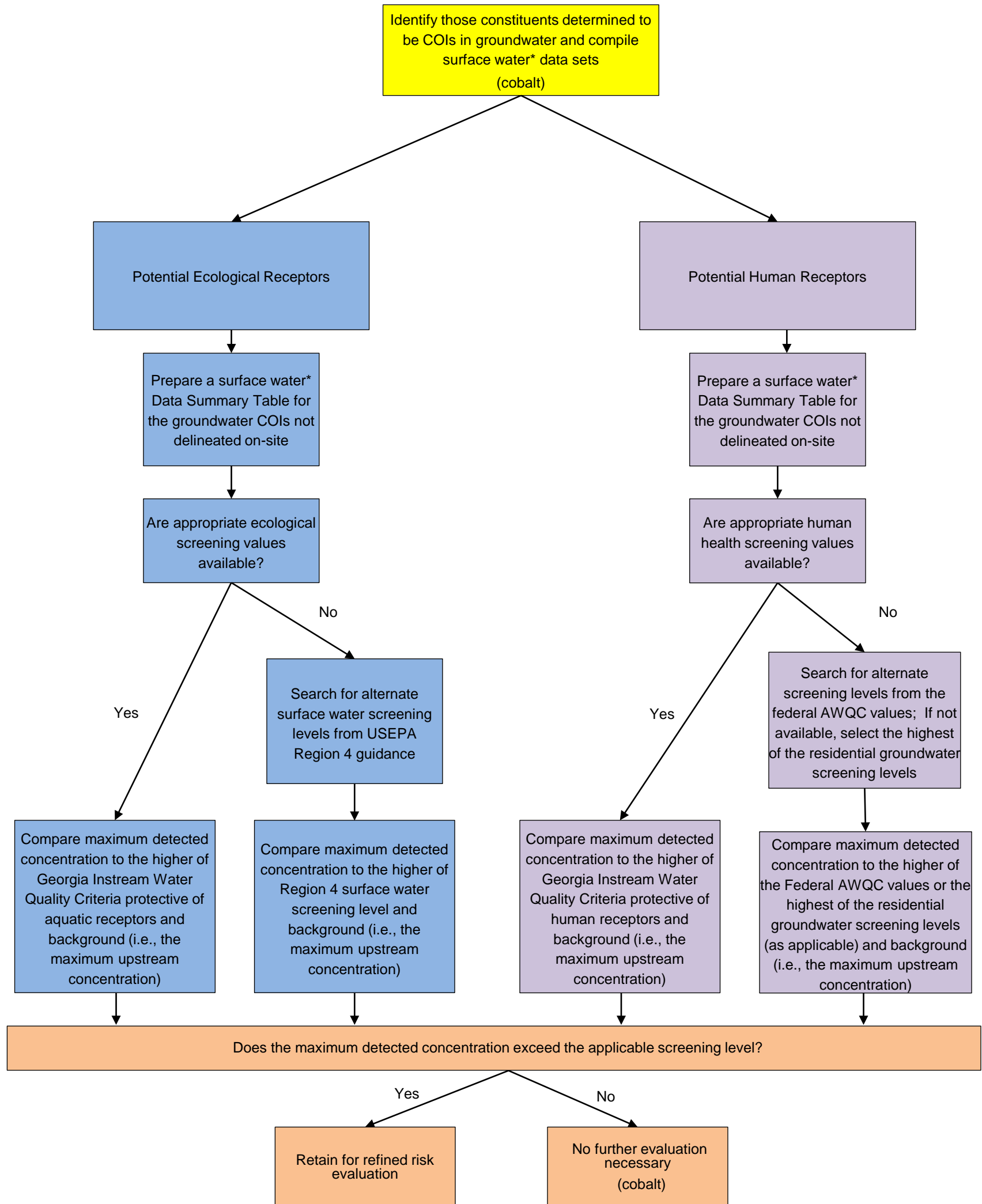
**Plant Hammond AP-2
Refined Groundwater Risk Evaluation Approach**

Figure 8

Project Number: GZ7112H

January 2021

Risk Screening Approach (Surface Water) for AP-2




* Surface water data collected from the unnamed creek.

SSL = Statistically Significant Level
 AWQC = Ambient Water Quality Criteria
 COI = Constituent of Interest
 COPI = Constituent of Potential Interest

Plant Hammond AP-2 Surface Water Risk Screening Approach	
Figure 9	
Project Number: GZ7112H	January 2021



LEGEND
 Surface Water Sample Point

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



SURFACE WATER SAMPLE LOCATIONS
 GEORGIA POWER
 PLANT HAMMOND AP-2
 ROME, FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

Prepared By:  Geosyntec
 consultants

KENNESAW, GA JANUARY 2021

FIGURE
10

N:\GA Power\CCR Risk Evaluations\GIS\Hammond\AP2\Figure 10_SurfaceWaterSampleLocations.mxd 11/8/2021 9:46:19 AM

APPENDIX A

Plant Hammond Well Survey (Off-Site)

Well Survey

Plant Hammond

Ash Pond 1, Ash Pond 2, Ash Pond 3, Ash Pond 4

Rome, GA

Prepared for

Georgia Power Company

241 Ralph McGill Blvd., Atlanta, GA 30308

Prepared by

NewFields Companies, LLC

1349 W. Peachtree Street, Suite 2000

Atlanta, GA 30309

March 5, 2020

Introduction

Plant Hammond is located at 5963 Alabama Highway SW, Rome, GA 30165 and situated on an approximately 430-acre parcel along the Coosa River.

The Plant has four current and former ash ponds. Newfields conducted a well survey of potential drinking water wells within a three-mile radius of Ash Pond 1 (AP-1), Ash Pond 2 (AP-2), Ash Pond 3 (AP-3), and Ash Pond 4 (AP-4). This area, referred to in this report as the Investigated Area, is shown on Figure 1.

As part of the survey, NewFields reviewed information from a number of Federal, State, and County records and online sources, as well as a windshield survey of the Investigated Area. Information from each identified well was then compiled into a geographic information system (GIS) database.

Information Collection

This section summarizes the sources utilized to identify potential drinking water wells within the Investigated Area.

1. Federal Sources

- a. **United States Geological Survey (USGS).** The USGS maintains an inventory database of wells sampled by a USGS-affiliated program for ground-water levels or water quality parameters at any time in the past.¹ Well information and coordinates were downloaded for the state of Georgia and compiled into the GIS database. All of the wells in this database in the Investigated Area were identified in the database simply as ‘monitoring wells’; however, many of these appear to be co-located with drinking water wells. Some of these USGS monitoring wells may in fact be private drinking water wells utilized for monitoring purposes by USGS.
- b. **Safe Drinking Water Information System (SDWIS).** This EPA database has listings of public water systems but does not have well location information. SDWIS information was used to help identify the suppliers of public water in the vicinity of each facility. The water supplier for the Investigated Area is the Floyd County Water Utility.

2. State Sources

Georgia Environmental Protection Division (EPD)

- a. **Drinking Water Branch.** EPD Drinking Water Branch maintains records about municipal and industrial wells, whose presence or absence within a radius of a site can be ascertained by contacting the agency. NewFields contacted Vicki Trent of EPD on October 3rd, 2019 requesting information about wells in the Investigated Area. Ms. Trent confirmed that there were no wells in the Investigated Area.

¹ <http://waterdata.usgs.gov/ga/nwis/inventory?introduction>

- b. **EPD Pesticide Sampling Project.** From 2000 to 2004, EPD undertook a project to sample private drinking water wells for pesticides. EPD solicited volunteers state-wide to participate in the well sampling program. The final report includes the list of private water wells sampled, their coordinates, and depths when available.² Information about wells within the Investigated Area were compiled into the GIS database.
 - c. **Hazardous Site Inventory (HSI) Files.** EPD maintains files for Hazardous Site Inventory files for site which are undergoing state-led corrective action. These files usually contain groundwater data and well surveys. The EPD's online, interactive HSI map was reviewed. The only nearby HSI site is the Berryhill Landfill, 1.3 miles to the northwest of the northern impoundment. This site was added to the GIS databases. Reports associated with this site were reviewed, and wells identified in site files were added to the GIS database.
 - d. **Hazardous Site Response Act (HSRA) Notifications.** EPD maintains non-HSI HSRA notification reports (i.e., notifications submitted after releases of reportable substances). NewFields reviewed reports associated with sites in Floyd County within a 5-mile radius of Plant Hammond were scanned. Wells identified on these surveys were compiled into the GIS database. NewFields omitted the four monitoring wells shown to be located on Plant Hammond's property by past non-HSI well surveys, as we considered it unlikely Georgia Power would be utilizing their monitoring wells for irrigation or drinking purposes.
3. Floyd County Sources
- a. **Health Department Records.** Floyd County Health Department (DOH) maintains records of the permits for "on-site sewage management systems" (septic tanks). These permits indicate whether the permittee has private or public water supply, and often identify the exact location of the well on a map. NewFields communicated with Timothy Hendrix with the Department of Environmental Health, who stated that it was not feasible for the DOH to search the septic records themselves, and they would not allow NewFields direct access to the files. However, Mr. Hendrix said he did not believe there was any public water available to the west of Huffaker Road.
 - b. **Floyd County Water Department.** NewFields communicated with Floyd County Utilities Administrator Stephen Hulseley who stated, "[w]e have nothing in the Coosa area west from Hwy 100 South." Hwy 100 South, also known as Foster Mill Road, is the road that runs between AP-2 and AP-4 and is the next major road to the west of Huffaker Rd. Mr. Hulseley stated he was not sure exactly how long the water system has been in place, but that he believed it was operating "since the 1970s."
 - c. **Tax Assessor Records.** Floyd County GIS department provided parcel data for the county that was joined with full WINGap data from the tax assessor's office. The tax assessor's data included improvement values for parcels (indicating the presence of a structure) and the

² https://epd.georgia.gov/sites/epd.georgia.gov/files/related_files/site_page/PR-55.pdf

year of construction. Parcels with structures built prior to 1970 were identified as potentially containing active or abandoned drinking water wells.

4. Windshield Surveys

- a. A windshield survey of the Investigated Area was conducted on October 9th, 2019. During the survey a number of wells were visually identified, which were subsequently compiled into the GIS database. It is impossible to determine whether the wells seen are irrigation wells, drinking water wells, or are currently active.

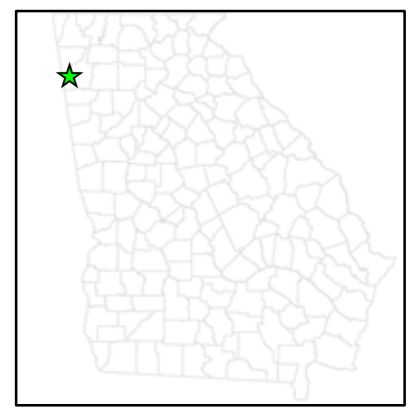
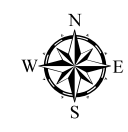
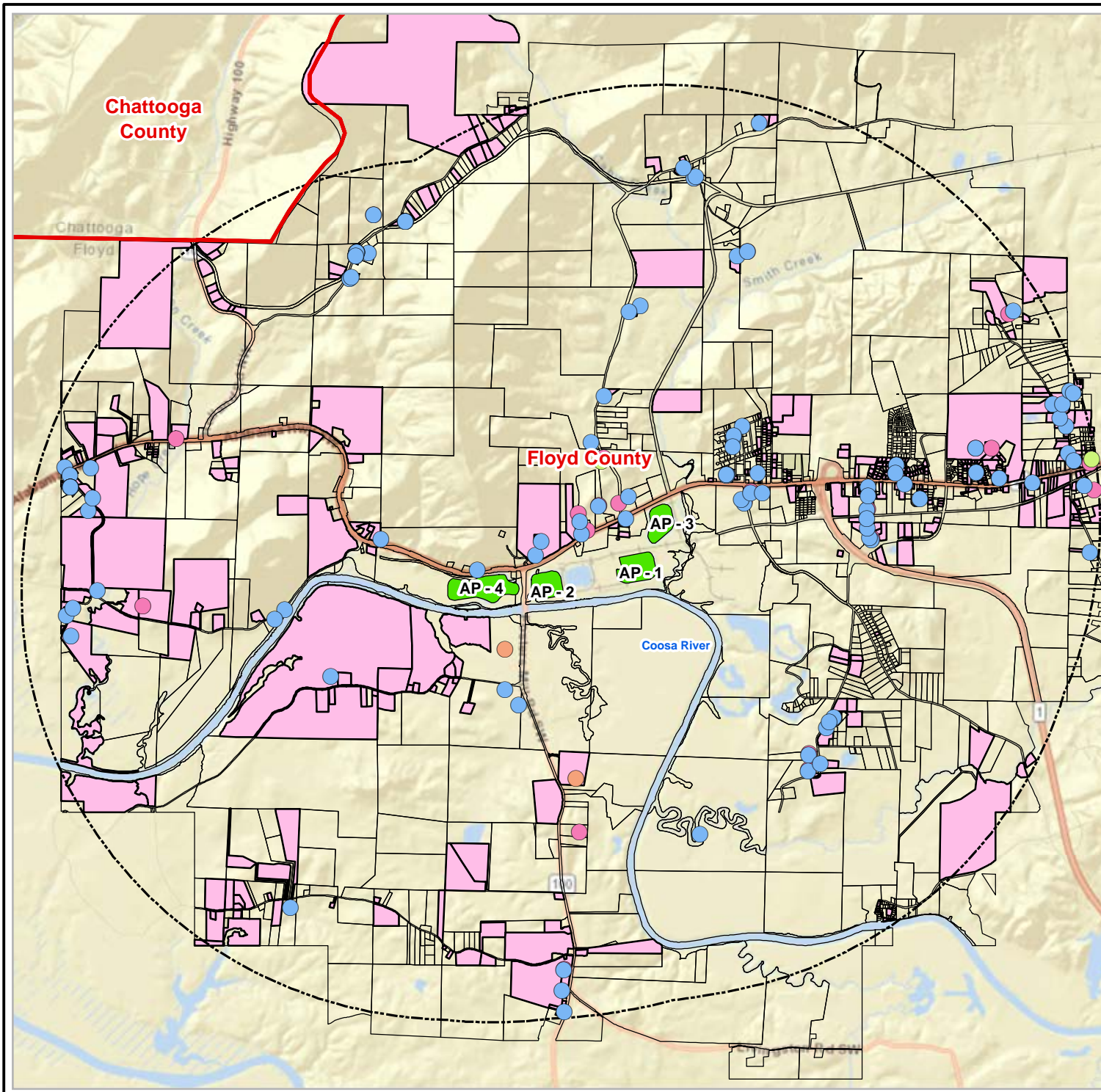
Summary

In addition to identifying specific wells from the above listed sources, NewFields used a combination of parcel data and information about the presence and age of public water infrastructure to identify parcels that most likely are using well water as their drinking water source or had drinking water wells at some time. Parcels may be (or have been) sharing wells, so a well may not exist for each identified parcel. These wells may or may not be active for drinking water and/or irrigation. Many wells were visible in the windshield surveys.

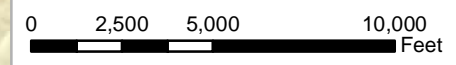
NewFields identified 707 actual and potential wells within the Investigated Area, the majority of which are likely private drinking water wells, but also some monitoring wells and commercial wells.³ There were no public drinking water wells within the Investigated Area.

Figure 1 shows points for identified wells in the Investigated Area. The shaded parcels are parcels that were identified from parcel data as likely to contain wells. When viewed as a PDF file, the figure is interactive, and wells identified using different sources can be turned on and off.

³ USGS monitoring wells located on Georgia Power property were considered not to be drinking water wells and omitted from the figures and tables in this report.



- Commercial Well
- Private Drinking Well
- Irrigation Well
- Monitoring Well
- County Line
- 3-Mile Radius
- Ash Pond
- Parcels
- Parcel identified as likely having a well



Title		Plant Hammond - Ash Ponds 1 - 4	
Project		GPC Plants Georgia	
		Two Midtown Plaza 1349 W. Peachtree St. #2000 Atlanta, Georgia 30309 Tel: 404-347-9050	
Date	02/13/2020	Rev. No.	2
MXD	gpc_ccr_2019/agis	Figure No.	1

APPENDIX B
Data Used in Risk Evaluation

Appendix B
Appendix B-1
Groundwater Data
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

Well ID	Sample Date	Constituent	Cobalt	Molybdenum
		Units	mg/L	mg/L
		Ash Pond		
HGWC-18	5/24/2016	AP-2	0.17	<0.01
HGWC-18	7/12/2016	AP-2	0.17	<0.01
HGWC-18	9/1/2016	AP-2	0.18	<0.01
HGWC-18	10/25/2016	AP-2	0.19	<0.01
HGWC-18	12/8/2016	AP-2	0.21	<0.01
HGWC-18	1/26/2017	AP-2	0.20	<0.01
HGWC-18	3/23/2017	AP-2	0.22	<0.01
HGWC-18	5/25/2017	AP-2	0.21	<0.01
HGWC-18	4/3/2018	AP-2	0.19	<0.01
HGWC-18	6/5/2018	AP-2	0.19	--
HGWC-18	10/3/2018	AP-2	0.19	--
HGWC-18	3/14/2019	AP-2	0.16	<0.01
HGWC-18	4/5/2019	AP-2	0.14	<0.01
HGWC-18	9/25/2019	AP-2	0.18	<0.01
HGWC-18	3/3/2020	AP-2	0.15	<0.01
HGWC-18	3/31/2020	AP-2	0.16	<0.01
MW-21D	3/15/2019	AP-2	<0.01	0.045
MW-21D	4/4/2019	AP-2	0.00034	0.033
MW-21D	9/25/2019	AP-2	<0.0025	0.038
MW-21D	3/3/2020	AP-2	<0.005	0.025
MW-21D	4/1/2020	AP-2	<0.005	0.024
MW-21D	6/17/2020	AP-2	<0.005	0.019

Notes:

Bold = the constituent was detected in the sample.

"--" = No analysis conducted.

mg/L milligrams(s) per liter

< = Non-detect result; the reporting limit is presented

(ND) = Non-detect result; the reporting limit is presented

Appendix B
Appendix B-2
Surface Water Data
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

			Constituent	Cobalt
			Units	mg/L
Sample ID	Sample Location	River Sampled	Sample Date	
AP-2 DOWN	Downstream	Unnamed Creek	7/17/2020	<0.005 ND
AP-2 MID	Downstream	Unnamed Creek	7/17/2020	<0.005 ND
AP-2 UP	Upstream	Unnamed Creek	7/17/2020	<0.005 ND

Notes:

Bold = the constituent was detected in the sample

mg/L = milligrams(s) per liter

< = Non-detect result; the reporting limit is presented

(ND) = Non-detect result; the reporting limit is presented

APPENDIX C

USEPA RSL Calculator Generated Residential Screening Levels

Appendix C
USEPA RSL Calculator Generated Residential Screening Levels
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

Variable	Value
THQ (target hazard quotient) unitless	1
TR (target risk) unitless	0.00001
LT (lifetime) years	70
K (volatilization factor of Andelman) L/m3	0.5
Isc (apparent thickness of stratum corneum) cm	0.001
EDres (exposure duration - resident) years	26
EDres-c (exposure duration - child) years	6
EDres-a (exposure duration - adult) years	20
ED0-2 (mutagenic exposure duration first phase) years	2
ED2-6 (mutagenic exposure duration second phase) years	4
ED6-16 (mutagenic exposure duration third phase) years	10
ED16-26 (mutagenic exposure duration fourth phase) years	10
EFres (exposure frequency) days/year	350
EFres-c (exposure frequency - child) days/year	350
EFres-a (exposure frequency - adult) days/year	350
EF0-2 (mutagenic exposure frequency first phase) days/year	350
EF2-6 (mutagenic exposure frequency second phase) days/year	350
EF6-16 (mutagenic exposure frequency third phase) days/year	350
EF16-26 (mutagenic exposure frequency fourth phase) days/year	350
EEvent-res-adj (age-adjusted exposure time) hours/event	0.67077
EEvent-res-madj (mutagenic age-adjusted exposure time) hours/event	0.67077
ETres (exposure time) hours/day	24
ETres-c (dermal exposure time - child) hours/event	0.54
ETres-a (dermal exposure time - adult) hours/event	0.71
ETres-c (inhalation exposure time - child) hours/day	24
ETres-a (inhalation exposure time - adult) hours/day	24
ET0-2 (mutagenic inhalation exposure time first phase) hours/day	24
ET2-6 (mutagenic inhalation exposure time second phase) hours/day	24
ET6-16 (mutagenic inhalation exposure time third phase) hours/day	24
ET16-26 (mutagenic inhalation exposure time fourth phase) hours/day	24
ETO-2 (mutagenic dermal exposure time first phase) hours/event	0.54
ET2-6 (mutagenic dermal exposure time second phase) hours/event	0.54
ET6-16 (mutagenic dermal exposure time third phase) hours/event	0.71
ET16-26 (mutagenic dermal exposure time fourth phase) hours/event	0.71
BWres-a (body weight - adult) kg	80
BWres-c (body weight - child) kg	15
BW0-2 (mutagenic body weight) kg	15
BW2-6 (mutagenic body weight) kg	15
BW6-16 (mutagenic body weight) kg	80
BW16-26 (mutagenic body weight) kg	80
IFWres-adj (adjusted intake factor) L/kg	327.95
IFWres-adj (adjusted intake factor) L/kg	327.95
IFWMres-adj (mutagenic adjusted intake factor) L/kg	1019.9
IFWMres-adj (mutagenic adjusted intake factor) L/kg	1019.9
IRWres-c (water intake rate - child) L/day	0.78
IRWres-a (water intake rate - adult) L/day	2.5
IRW0-2 (mutagenic water intake rate) L/day	0.78
IRW2-6 (mutagenic water intake rate) L/day	0.78
IRW6-16 (mutagenic water intake rate) L/day	2.5
IRW16-26 (mutagenic water intake rate) L/day	2.5
EVres-a (events - adult) per day	1
EVres-c (events - child) per day	1
EVO-2 (mutagenic events) per day	1
EV2-6 (mutagenic events) per day	1
EV6-16 (mutagenic events) per day	1
EV16-26 (mutagenic events) per day	1
DFWres-adj (age-adjusted dermal factor) cm2-event/kg	2610650
DFWMres-adj (mutagenic age-adjusted dermal factor) cm2-event/kg	8191633
SAres-c (skin surface area - child) cm2	6365
SAres-a (skin surface area - adult) cm2	19652
SA0-2 (mutagenic skin surface area) cm2	6365
SA2-6 (mutagenic skin surface area) cm2	6365
SA6-16 (mutagenic skin surface area) cm2	19652
SA16-26 (mutagenic skin surface area) cm2	19652

Output generated 06NOV2019:16:09:05

Appendix C
USEPA RSL Calculator Generated Residential Screening Levels
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

Chemical	Cobalt	Molybdenum
CAS Number	7440-48-4	7782-49-2
Mutagen?	No	No
Volatile?	No	No
Chemical Type	Inorganics	Inorganics
Sfo (mg/kg-day)-1	-	-
Sfo Ref		
IUR (ug/m3)-1	0.009	-
IUR Ref	P	
RfD (mg/kg-day)	0.0003	0.005
RfD Ref	P	I
RfC (mg/m3)	0.000006	0.02
RfC Ref	P	C
GIABS	1	1
Kp (cm/hr)	0.0004	0.001
MW	58.9	79
B (unitless)	0.00118	0.00342
t* (hr)	0.54	0.699
tevent (hr/event)	0.225	0.291
FA (unitless)	1	1
In EPD?	Yes	Yes
DAevent (ca)	-	-
DAevent (nc child)	0.000737	0.0123
DAevent (nc adult)	0.00127	0.0212
MCL (ug/L)	-	50
Ingestion SL TR=1E-05 (ug/L)	-	-
Dermal SL TR=1E-05 (ug/L)	-	-
Inhalation SL TR=1E-05 (ug/L)	-	-
Carcinogenic SL TR=1E-05 (ug/L)	-	-
Ingestion SL Child THQ=1 (ug/L)	6.02	100
Dermal SL Child THQ=1 (ug/L)	3410	22800
Inhalation SL Child THQ=1 (ug/L)	-	-
Noncarcinogenic SL Child THI=1 (ug/L)	6.01	99.8
Ingestion SL Adult THQ=1 (ug/L)	10	167
Dermal SL Adult THQ=1 (ug/L)	4480	29900
Inhalation SL Adult THQ=1 (ug/L)	-	-
Noncarcinogenic SL Adult THI=1 (ug/L)	9.99	166
Screening Level (ug/L)	6.01E+00 nc	9.98E+01 nc

Notes

I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = DWSHA; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

APPENDIX D

Support for Refined Risk Evaluation

Appendix D-1
Exposure Point Concentration
Calculation Results

Appendix D

Appendix D-1

Exposure Point Concentration Calculation Details^[1]

Plant Hammond AP-2 Risk Evaluation Report

Plant Hammond, Rome, GA

CCR Rule Designation	Constituent	Well IDs Included	Maximum Concentration (mg/L)	Detection Frequency	Exceedance Frequency	EPC Step 1	EPC Step 2	EPC Step 3
						Individual Target Well(s) 2016-2020 (mg/L)	Target Well(s) & Downgradient Well(s) 2016-2020 (mg/L)	Farthest Downgradient Well(s) 2016-2020 (mg/L)
Appendix IV	Cobalt	HGWC-18	0.22	16 / 16	16 / 16	0.19		
		HGWC-18 MW-21D	0.22	17 / 22	16 / 22		0.21	
		[2]		--	--			Not Calculated

Notes:

Highlighted value is the EPC selected for the refined screening.

[1] EPCs calculated in accordance with USEPA, 2014. Memorandum for Determining Groundwater Exposure Point Concentrations, Supplemental Guidance. OSWER Directive 9283.1-42, February 2014. Located at <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236917>

[2] The Step 3 EPC was not calculated for this constituent because there was no well located downgradient of the well with the exceedance.

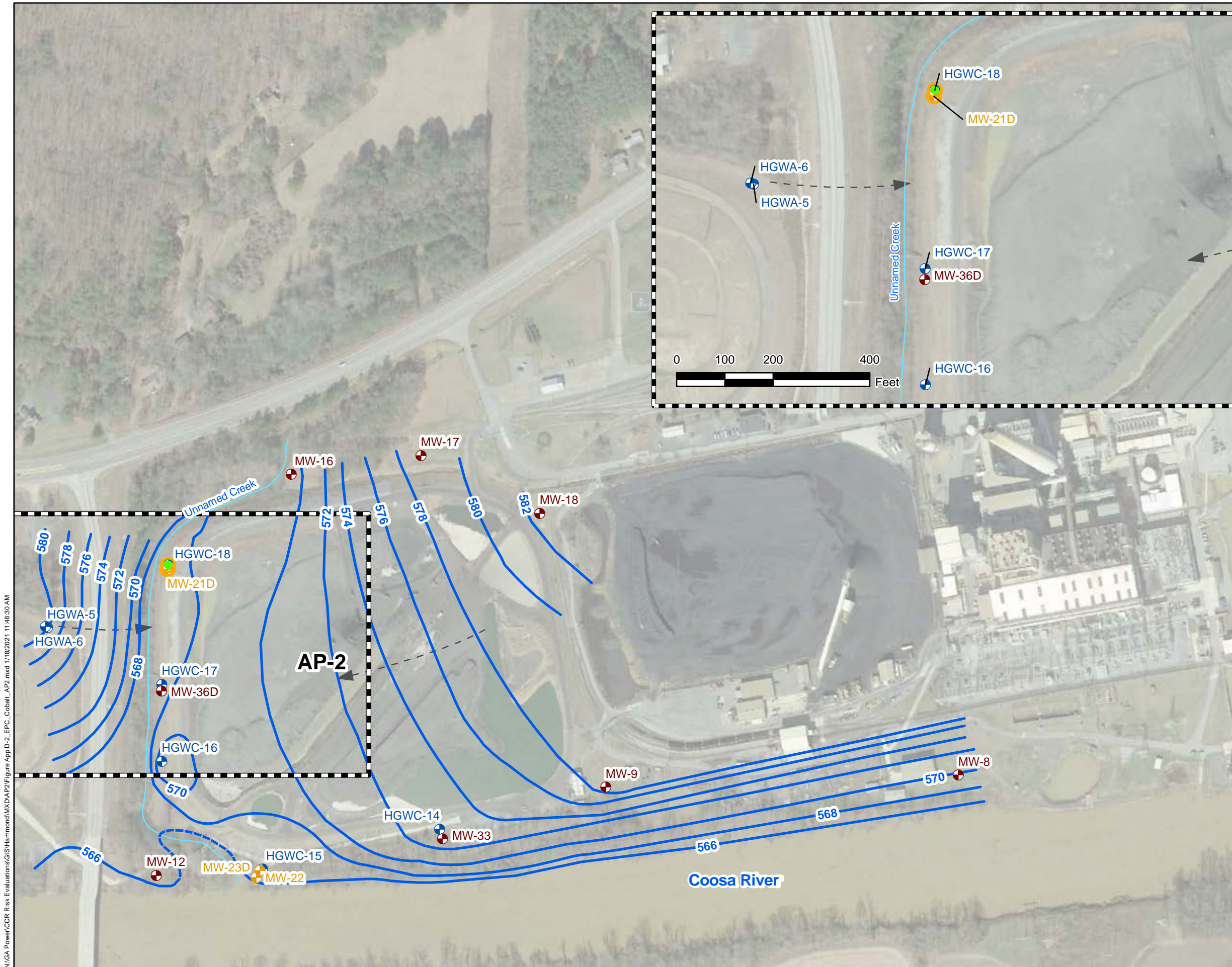
Definitions:

EPC = Exposure Point Concentration

mg/L = milligrams per liter

Appendix D-2

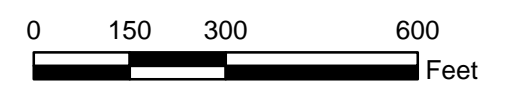
Exposure Point Concentration Figures



- LEGEND**
- Compliance Monitoring Well
 - Delineation Monitoring Well
 - Groundwater Level Monitoring Piezometer
 - Groundwater Elevation Iso-Contour (inferred where dashed)
 - ▶ Approximate Groundwater Flow Direction

- Exposure Point Concentration Wells**
- Step 1 Well
 - Step 2 Well
 - Step 3 Well

- Notes:**
1. Exposure Point Concentration (EPC).
 2. EPC Step 1 - Individual Target Well(s) 2016-2020.
 3. EPC Step 2 - Target Well(s) & Adjacent Well(s) & Downgradient Well(s) 2016-2020.
 4. EPC Step 3 - Farthest Downgradient Well(s) 2016-2020.
 5. Water elevation contours are based on measurements shown on Figure 3. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88.
 6. Aerial photograph source: Google Earth Pro, February 2018.



**EXPOSURE POINT CONCENTRATION MAP
COBALT**

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

Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA JANUARY 2021

**APPENDIX
D-2**

N:\GA Power\CCR Risk Evaluations\GIS\Hammond\MDX\AP2\Figure App D-2_EPC_Cobalt_AP2.mxd 1/18/2021 11:48:30 AM

Appendix D-3

ProUCL Input / Output Files

Appendix D
Appendix D-3
ProUCL Input
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

Step 1 EPC Calculation Input		Step 2 EPC Calculation Input	
Step1_Cobalt	D_Step1_Cobalt	Step2_Cobalt	D_Step2_Cobalt
0.17	1	0.17	1
0.168	1	0.168	1
0.18	1	0.18	1
0.188	1	0.188	1
0.206	1	0.206	1
0.195	1	0.195	1
0.223	1	0.223	1
0.209	1	0.209	1
0.19	1	0.19	1
0.19	1	0.19	1
0.19	1	0.19	1
0.16	1	0.16	1
0.14	1	0.14	1
0.18	1	0.18	1
0.15	1	0.15	1
0.16	1	0.16	1
		0.01	0
		0.00034	1
		0.0025	0
		0.005	0
		0.005	0
		0.005	0

Notes:

EPC= Exposure point Concentration

Appendix D
Appendix D-3
ProUCL Output
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

UCL Statistics for Data Sets with Non-Detects

User Selected Options
 Date/Time of Computation ProUCL 5.11/14/2021 12:18:06 PM
 From File WorkSheet_b.xls
 Full Precision OFF
 Confidence Coefficient 95%
 Number of Bootstrap Operations 2000

Step1_Cobalt

General Statistics			
Total Number of Observations	16	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	0.14	Mean	0.181
Maximum	0.223	Median	0.184
SD	0.0223	Std. Error of Mean	0.00558
Coefficient of Variation	0.123	Skewness	-0.055

Normal GOF Test		Shapiro Wilk GOF Test	
Shapiro Wilk Test Statistic	0.982	Data appear Normal at 5% Significance Level	
5% Shapiro Wilk Critical Value	0.887		
Lilliefors Test Statistic	0.12	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.213	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution			
95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.191	95% Adjusted-CLT UCL (Chen-1995)	0.19
		95% Modified-t UCL (Johnson-1978)	0.191

Gamma GOF Test		Anderson-Darling Gamma GOF Test	
A-D Test Statistic	0.22	Detected data appear Gamma Distributed at 5% Significance Level	
5% A-D Critical Value	0.736	Kolmogorov-Smirnov Gamma GOF Test	
K-S Test Statistic	0.136	Detected data appear Gamma Distributed at 5% Significance Level	
5% K-S Critical Value	0.214		

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics			
k hat (MLE)	68.94	k star (bias corrected MLE)	56.06
Theta hat (MLE)	0.00263	Theta star (bias corrected MLE)	0.00323
nu hat (MLE)	2206	nu star (bias corrected)	1794
MLE Mean (bias corrected)	0.181	MLE Sd (bias corrected)	0.0242
		Approximate Chi Square Value (0.05)	1696
Adjusted Level of Significance	0.0335	Adjusted Chi Square Value	1686

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	0.192	95% Adjusted Gamma UCL (use when n<50)	0.193

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.976
5% Shapiro Wilk Critical Value	0.887
Lilliefors Test Statistic	0.138
5% Lilliefors Critical Value	0.213

Shapiro Wilk Lognormal GOF Test

Data appear Lognormal at 5% Significance Level

Lilliefors Lognormal GOF Test

Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level**Lognormal Statistics**

Minimum of Logged Data	-1.966	Mean of logged Data	-1.715
Maximum of Logged Data	-1.501	SD of logged Data	0.125

Assuming Lognormal Distribution

95% H-UCL	0.192	90% Chebyshev (MVUE) UCL	0.198
95% Chebyshev (MVUE) UCL	0.206	97.5% Chebyshev (MVUE) UCL	0.217
99% Chebyshev (MVUE) UCL	0.238		

Nonparametric Distribution Free UCL Statistics**Data appear to follow a Discernible Distribution at 5% Significance Level****Nonparametric Distribution Free UCLs**

95% CLT UCL	0.19	95% Jackknife UCL	0.191
95% Standard Bootstrap UCL	0.19	95% Bootstrap-t UCL	0.191
95% Hall's Bootstrap UCL	0.191	95% Percentile Bootstrap UCL	0.19
95% BCA Bootstrap UCL	0.19		
90% Chebyshev(Mean, Sd) UCL	0.198	95% Chebyshev(Mean, Sd) UCL	0.206
97.5% Chebyshev(Mean, Sd) UCL	0.216	99% Chebyshev(Mean, Sd) UCL	0.237

Suggested UCL to Use

95% Student's-t UCL 0.191

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.**Step2_Cobalt****General Statistics**

Total Number of Observations	22	Number of Distinct Observations	16
Number of Detects	17	Number of Non-Detects	5
Number of Distinct Detects	13	Number of Distinct Non-Detects	3
Minimum Detect	3.4000E-4	Minimum Non-Detect	0.0025
Maximum Detect	0.223	Maximum Non-Detect	0.01
Variance Detects	0.00239	Percent Non-Detects	22.73%
Mean Detects	0.171	SD Detects	0.0489
Median Detects	0.18	CV Detects	0.287
Skewness Detects	-2.836	Kurtosis Detects	9.924
Mean of Logged Detects	-2.084	SD of Logged Detects	1.526

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.696
5% Shapiro Wilk Critical Value	0.892
Lilliefors Test Statistic	0.238

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

5% Lilliefors Critical Value 0.207 Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.132	KM Standard Error of Mean	0.0182
KM SD	0.0826	95% KM (BCA) UCL	0.159
95% KM (t) UCL	0.163	95% KM (Percentile Bootstrap) UCL	0.16
95% KM (z) UCL	0.162	95% KM Bootstrap t UCL	0.159
90% KM Chebyshev UCL	0.186	95% KM Chebyshev UCL	0.211
97.5% KM Chebyshev UCL	0.245	99% KM Chebyshev UCL	0.313

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.448	Anderson-Darling GOF Test
5% A-D Critical Value	0.753	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.444	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.212	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.732	k star (bias corrected MLE)	1.466
Theta hat (MLE)	0.0985	Theta star (bias corrected MLE)	0.116
nu hat (MLE)	58.89	nu star (bias corrected)	49.83
Mean (detects)	0.171		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	3.4000E-4	Mean	0.159
Maximum	0.223	Median	0.169
SD	0.0479	CV	0.302
k hat (MLE)	2.118	k star (bias corrected MLE)	1.859
Theta hat (MLE)	0.0751	Theta star (bias corrected MLE)	0.0855
nu hat (MLE)	93.19	nu star (bias corrected)	81.82
Adjusted Level of Significance (β)	0.0386		
Approximate Chi Square Value (81.82, α)	61.97	Adjusted Chi Square Value (81.82, β)	60.68
95% Gamma Approximate UCL (use when $n \geq 50$)	0.21	95% Gamma Adjusted UCL (use when $n < 50$)	0.214

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.132	SD (KM)	0.0826
Variance (KM)	0.00683	SE of Mean (KM)	0.0182
k hat (KM)	2.547	k star (KM)	2.23
nu hat (KM)	112.1	nu star (KM)	98.12
theta hat (KM)	0.0518	theta star (KM)	0.0591
80% gamma percentile (KM)	0.195	90% gamma percentile (KM)	0.25
95% gamma percentile (KM)	0.302	99% gamma percentile (KM)	0.418

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (98.12, α)	76.27	Adjusted Chi Square Value (98.12, β)	74.83
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	0.17	95% Gamma Adjusted KM-UCL (use when $n < 50$)	0.173

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.333	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.472	Lilliefors GOF Test

5% Lilliefors Critical Value 0.207 Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.137	Mean in Log Scale	-2.487
SD in Original Scale	0.0768	SD in Log Scale	1.539
95% t UCL (assumes normality of ROS data)	0.165	95% Percentile Bootstrap UCL	0.161
95% BCA Bootstrap UCL	0.16	95% Bootstrap t UCL	0.162
95% H-UCL (Log ROS)	0.852		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-3.426	KM Geo Mean	0.0325
KM SD (logged)	2.795	95% Critical H Value (KM-Log)	5.603
KM Standard Error of Mean (logged)	0.614	95% H-UCL (KM -Log)	49.24
KM SD (logged)	2.795	95% Critical H Value (KM-Log)	5.603
KM Standard Error of Mean (logged)	0.614		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	0.132
SD in Original Scale	0.0837
95% t UCL (Assumes normality)	0.163

DL/2 Log-Transformed

Mean in Log Scale	-2.972
SD in Log Scale	2.151
95% H-Stat UCL	4.18

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.211

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

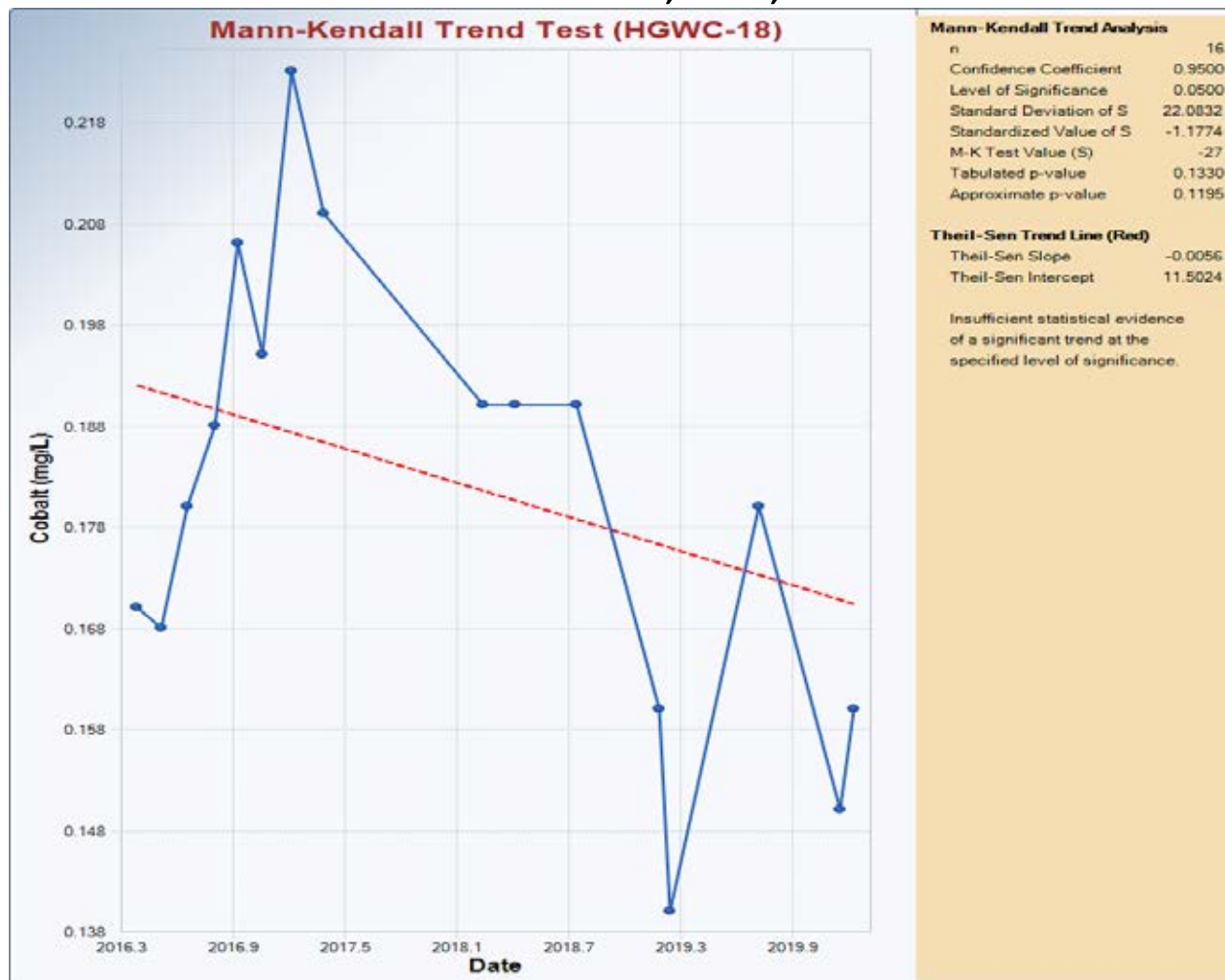
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulation results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Appendix D-4

Groundwater Trend Graphs

Appendix D
Appendix D-4
Groundwater Trend Graphs
Plant Hammond AP-2 Risk Evaluation Report
Plant Hammond, Rome, GA

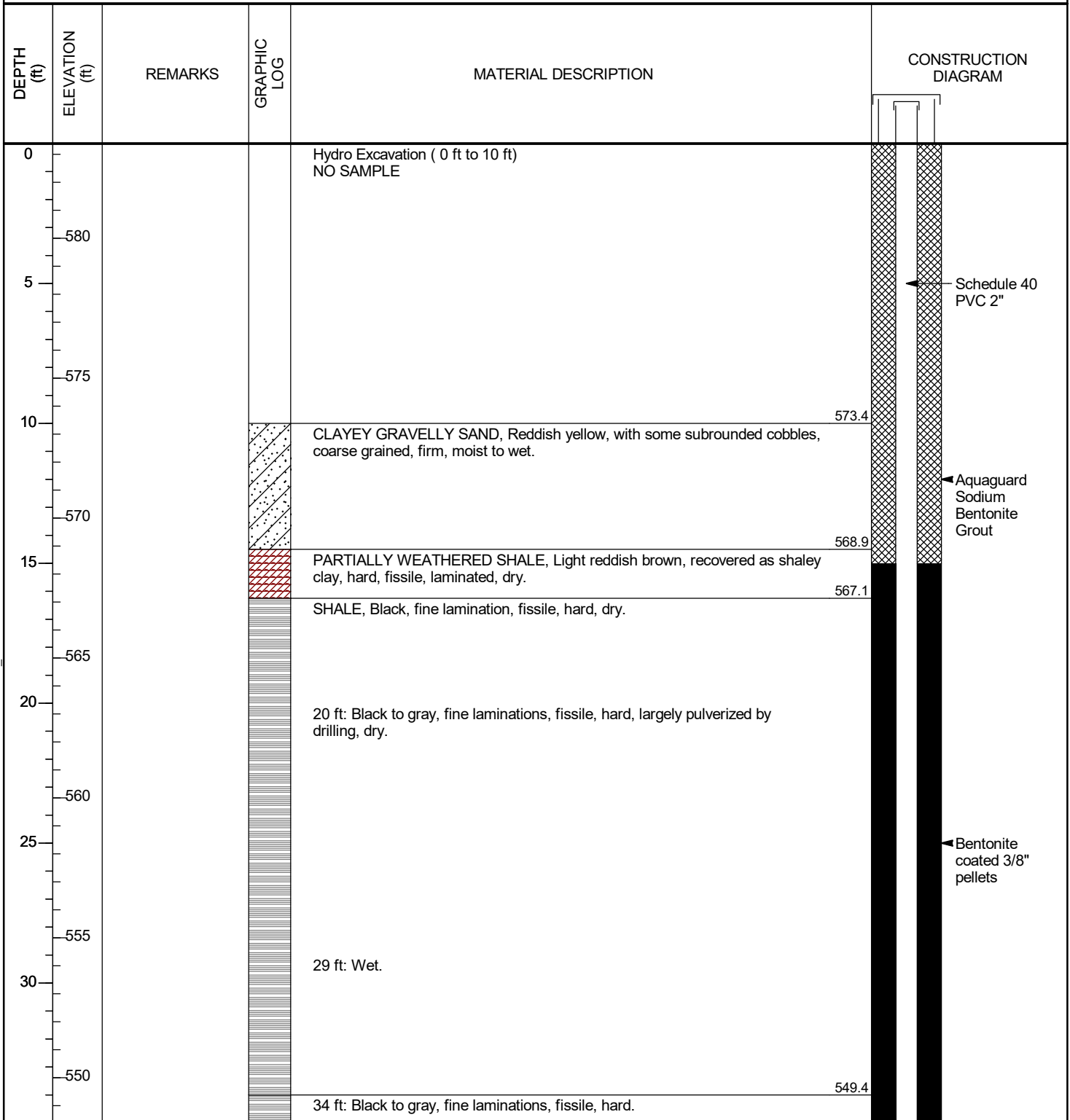


APPENDIX B

Boring and Well Construction Logs for
HGWA-42D, HGWA-43D, and
HGWA-44D

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>8/26/20</u> COMPLETED <u>8/27/20</u>	NORTHING <u>1549363.72 ft</u> EASTING <u>1938443.86 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>583.39 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>586.17 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

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
35				34 ft: Black to gray, fine laminations, fissile, hard. <i>(continued)</i>	
	545				
40		Water utilized during drilling likely resulted in washing away pulverized shale material.		40 ft: No recovery.	543.4
	540				
45					
	535				
50				SHALE, Black to gray, fine lamination, fissile, hard, dry.	533.4
	530				
55					
	525				
60				60 ft: Clayey, medium plasticity, hard, wet.	
	520				
65				63 ft: Black, dry, hard, thin bedding, fissile.	
					518.1

Bottom of borehole at 65.3 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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

← Bentonite coated 3/8" pellets

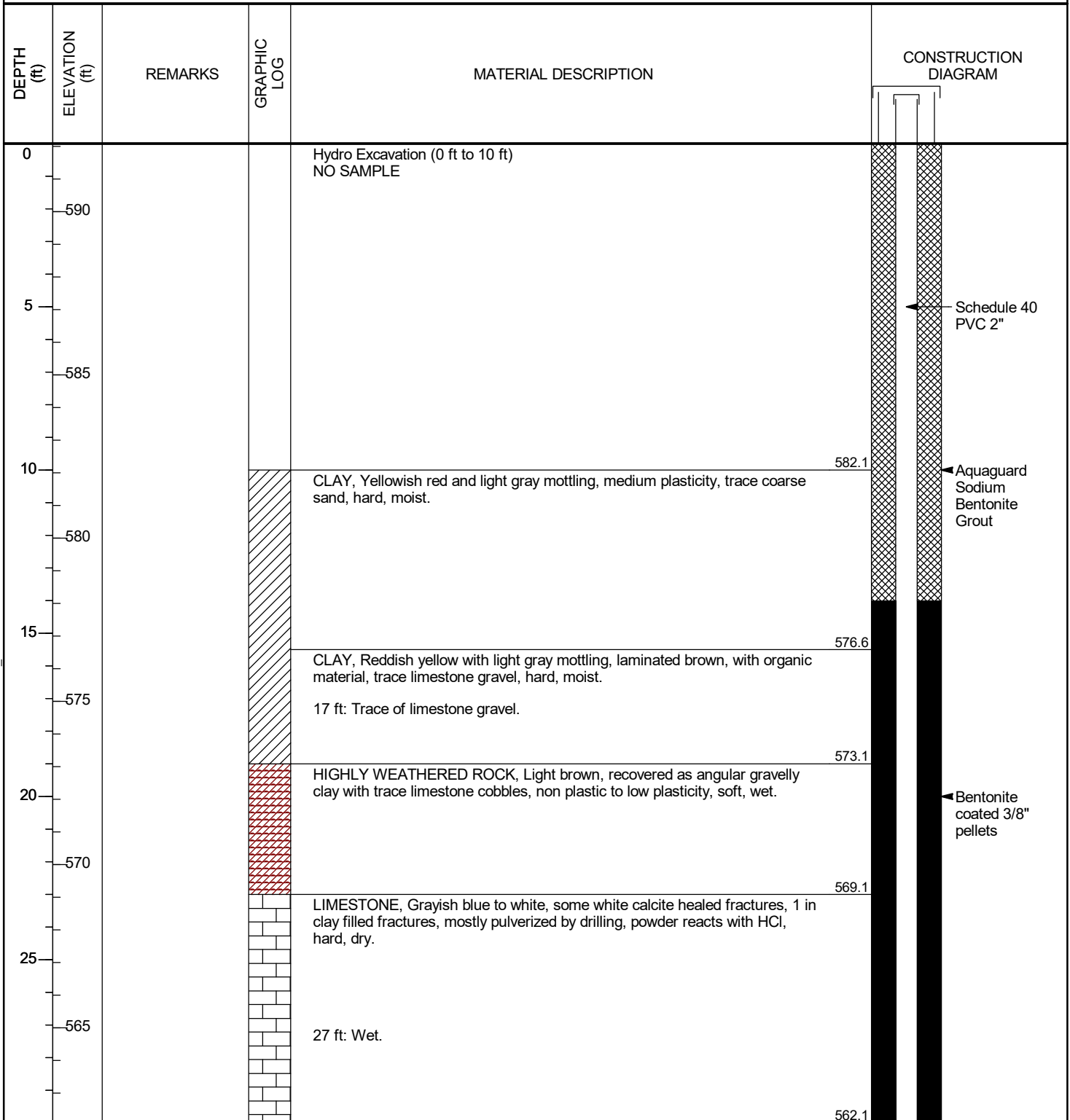
← 20/40 Silica Sand

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

Bottom of well: 65.25 ft

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>8/26/20</u> COMPLETED <u>8/26/20</u>	NORTHING <u>1550422.85 ft</u> EASTING <u>1940753.80 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>592.08 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>595.08 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

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
30	-560	30 ft to 50 ft: No voids reported.		30 ft to 34.5 ft: No recovery.	
35	-555		[Brick pattern graphic log]	LIMESTONE, Grayish blue to white, hard, dry, some white calcite healed fractures, 1 in clay filled fractures, 38 ft to 39 ft pulverized by drilling, powder reacts with HCl, wet.	557.6
40	-550			40 ft: Up to 1 in thick calcite healed fractures.	548.1
45	-545			44 ft to 50 ft: No recovery.	542.1
50	-540		[Brick pattern graphic log]	LIMESTONE, Grayish blue to white, hard, dry, up to 1 in thick calcite healed fractures, trace 1 in clay filled fractures, mostly pulverized by drilling, powder reacts with HCl.	533.8
55	-535				

← Bentonite coated 3/8" pellets

← 20/40 Silica Sand

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

Bottom of well: 58.25 ft

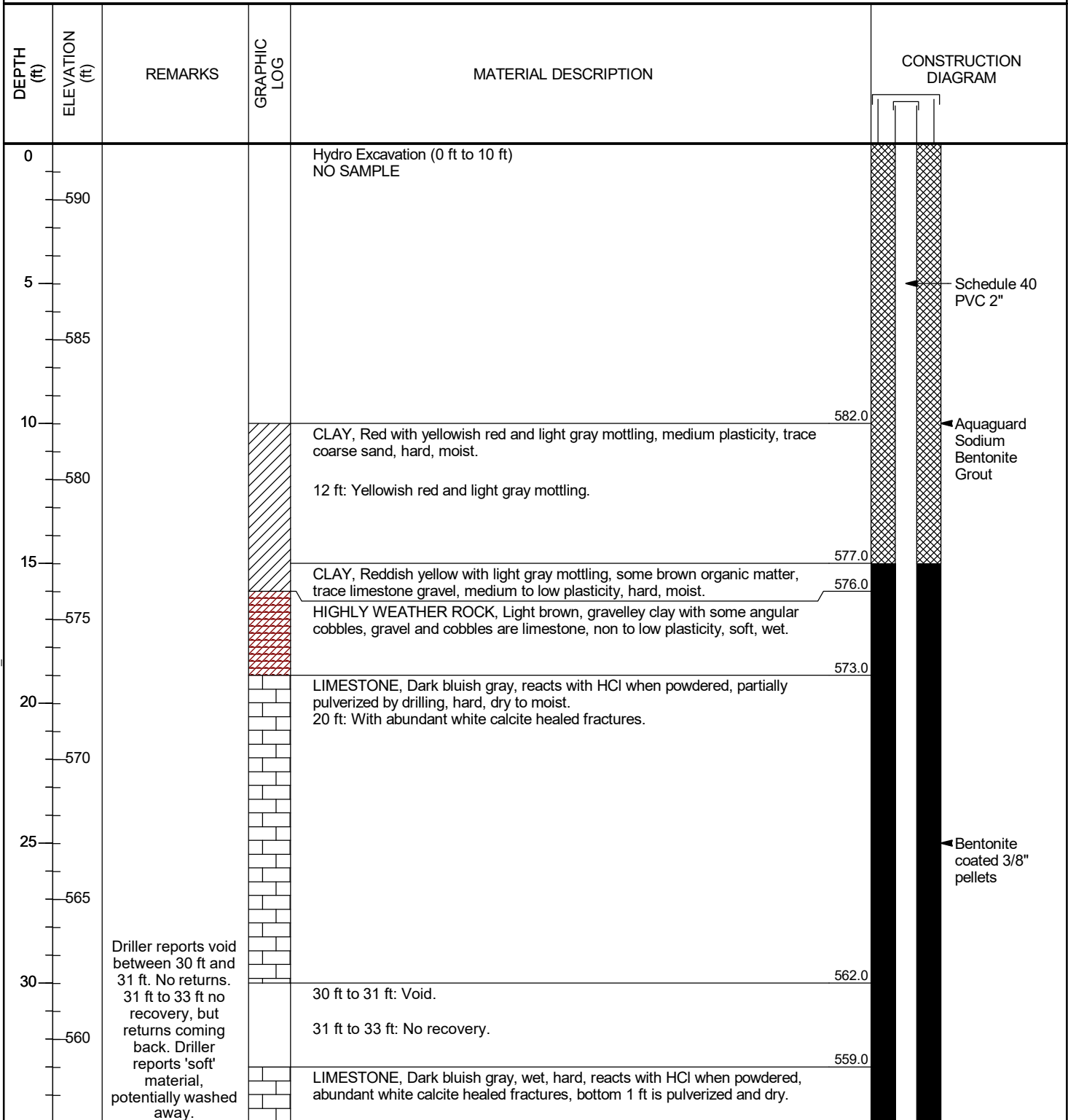
Bottom of borehole at 58.3 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>8/24/20</u> COMPLETED <u>8/25/20</u>	NORTHING <u>1550409.13 ft</u> EASTING <u>1940756.18 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>592.01 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>594.79 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	555	40 ft: Driller reports no returns.		LIMESTONE, Dark bluish gray, wet, hard, reacts with HCl when powdered, abundant white calcite healed fractures, bottom 1 ft is pulverized and dry. (continued)	
40	552.0			40 ft to 42 ft: No recovery.	
	550.0			LIMESTONE, Dark bluish gray, wet, hard, reacts with HCl when powdered, abundant white calcite healed fractures, bottom 1 ft is pulverized by drilling.	
45	545				
	542.0			50 ft to 52 ft: No recovery.	
50	540			LIMESTONE, Dark bluish gray, wet, hard, reacts with HCl when powdered, abundant white calcite healed fractures, bottom 1 ft is pulverized by drilling.	
55	535				
	532.0			60 ft to 61 ft: No recovery.	
60	531.0			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white 0.1 in to 2 in thick calcite healed fractures.	
65	525				
	522.0			70 ft to 71 ft: No recovery.	
70	521.0			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white hite 0.1 in to 2 in thick calcite healed fractures.	

← Bentonite coated 3/8" pellets

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

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
75	515			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white hite 0.1 in to 2 in thick calcite healed fractures. (continued)	<p>← Bentonite coated 3/8" pellets</p> <p>← 20/40 Silica Sand</p> <p>← 0.010 slot size 2" Pre Pack, U-Pack Screen</p> <p>Bottom of well: 110.5 ft</p>
80	510			80 ft to 84 ft: No recovery.	
85	505			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white 0.1 in to 2 in thick calcite healed fractures.	
90	500			90 ft to 94 ft: No recovery.	
95	495			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white 0.1 in to 2 in thick calcite healed fractures.	
100	490			100 ft to 102 ft: No recovery.	
105	485			LIMESTONE, Dark bluish gray, hard, wet, bottom 1 ft pulverized by drilling, reacts with HCl when powdered, abundant white 0.1 in to 2 in thick calcite healed fractures.	
110	480.0				

Bottom of borehole at 112.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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

APPENDIX E

Laboratory Analytical and Field Sampling Reports

Laboratory Reports

February 04, 2020

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

RE: Project: Plant Hammond
Pace Project No.: 2628190

Dear Joju Abraham:

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

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

Sincerely,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond

Pace Project No.: 2628190

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond

Pace Project No.: 2628190

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628190001	MW-33	Water	01/22/20 14:06	01/23/20 13:58
2628190002	EB-01	Water	01/22/20 14:32	01/23/20 13:58
2628190003	FB-01	Water	01/22/20 14:48	01/23/20 13:58

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond

Pace Project No.: 2628190

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2628190001	MW-33	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2628190002	EB-01	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2628190003	FB-01	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant Hammond

Pace Project No.: 2628190

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628190001	MW-33					
EPA 6010D	Calcium	638	mg/L	100	01/28/20 14:49	
EPA 6020B	Boron	11.2	mg/L	0.50	02/03/20 13:58	
EPA 6020B	Cobalt	0.052	mg/L	0.025	02/03/20 13:58	
SM 2540C	Total Dissolved Solids	2310	mg/L	10.0	01/24/20 16:14	
EPA 300.0 Rev 2.1 1993	Chloride	231	mg/L	25.0	01/28/20 23:03	
EPA 300.0 Rev 2.1 1993	Fluoride	0.18J	mg/L	0.30	01/28/20 12:40	
EPA 300.0 Rev 2.1 1993	Sulfate	1250	mg/L	25.0	01/28/20 23:03	
2628190002	EB-01					
EPA 6020B	Boron	0.045J	mg/L	0.10	01/31/20 19:41	
2628190003	FB-01					
EPA 6020B	Boron	0.013J	mg/L	0.10	01/31/20 19:47	
SM 2540C	Total Dissolved Solids	17.0	mg/L	10.0	01/24/20 16:14	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2628190

Sample: MW-33		Lab ID: 2628190001		Collected: 01/22/20 14:06		Received: 01/23/20 13:58		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Calcium	638	mg/L	100	14.1	100	01/24/20 15:36	01/28/20 14:49	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	11.2	mg/L	0.50	0.025	5	01/30/20 17:00	02/03/20 13:58	7440-42-8	
Cobalt	0.052	mg/L	0.025	0.0015	5	01/30/20 17:00	02/03/20 13:58	7440-48-4	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	2310	mg/L	10.0	10.0	1		01/24/20 16:14		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Chloride	231	mg/L	25.0	15.0	25		01/28/20 23:03	16887-00-6	
Fluoride	0.18J	mg/L	0.30	0.050	1		01/28/20 12:40	16984-48-8	
Sulfate	1250	mg/L	25.0	12.5	25		01/28/20 23:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2628190

Sample: EB-01		Lab ID: 2628190002		Collected: 01/22/20 14:32		Received: 01/23/20 13:58		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Calcium	ND	mg/L	1.0	0.14	1	01/24/20 15:36	01/25/20 04:25	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	0.045J	mg/L	0.10	0.0049	1	01/30/20 17:00	01/31/20 19:41	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.00030	1	01/30/20 17:00	01/31/20 19:41	7440-48-4	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		01/24/20 16:14		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Chloride	ND	mg/L	1.0	0.60	1		01/28/20 12:55	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		01/28/20 12:55	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		01/28/20 12:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2628190

Sample: FB-01		Lab ID: 2628190003		Collected: 01/22/20 14:48		Received: 01/23/20 13:58		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Calcium	ND	mg/L	1.0	0.14	1	01/24/20 15:36	01/25/20 04:30	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	0.013J	mg/L	0.10	0.0049	1	01/30/20 17:00	01/31/20 19:47	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.00030	1	01/30/20 17:00	01/31/20 19:47	7440-48-4	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	17.0	mg/L	10.0	10.0	1		01/24/20 16:14		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Chloride	ND	mg/L	1.0	0.60	1		01/28/20 13:09	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		01/28/20 13:09	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		01/28/20 13:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2628190

QC Batch: 42376 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D MET

Associated Lab Samples: 2628190001, 2628190002, 2628190003

METHOD BLANK: 193287 Matrix: Water

Associated Lab Samples: 2628190001, 2628190002, 2628190003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	01/25/20 02:18	

LABORATORY CONTROL SAMPLE: 193288

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 193289 193290

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2628044001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Calcium	mg/L	5540 ug/L	1	1	6.6	6.7	108	115	75-125	1	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2628190

QC Batch: 42642 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628190001, 2628190002, 2628190003

METHOD BLANK: 194851 Matrix: Water

Associated Lab Samples: 2628190001, 2628190002, 2628190003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.0049	01/31/20 19:24	
Cobalt	mg/L	ND	0.0050	0.00030	01/31/20 19:24	

LABORATORY CONTROL SAMPLE: 194852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.1	108	80-120	
Cobalt	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 194853 194854

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2628247001 Result	Spike Conc.	Spike Conc.	Result						
Boron	mg/L	0.24J	1	1	1.2	1.2	94	94	75-125	0	20
Cobalt	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2628190

QC Batch: 42383 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2628190001, 2628190002, 2628190003

LABORATORY CONTROL SAMPLE: 193380

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

SAMPLE DUPLICATE: 193381

Parameter	Units	2628090001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	98.0	86.0	13	10	D6

SAMPLE DUPLICATE: 193382

Parameter	Units	2628247001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3280	3260	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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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2628190

QC Batch: 521472 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2628190001, 2628190002, 2628190003

METHOD BLANK: 2789708 Matrix: Water
Associated Lab Samples: 2628190001, 2628190002, 2628190003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	01/28/20 05:14	
Fluoride	mg/L	ND	0.10	0.050	01/28/20 05:14	
Sulfate	mg/L	ND	1.0	0.50	01/28/20 05:14	

LABORATORY CONTROL SAMPLE: 2789709

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	2.7	107	90-110	
Sulfate	mg/L	50	51.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2789710 2789711

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92461867001 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	89.5	50	50	50	135	135	91	90	90-110	1	10	
Fluoride	mg/L	1.4	2.5	2.5	2.5	3.8	3.9	96	97	90-110	1	10	
Sulfate	mg/L	88.2	50	50	50	127	127	78	77	90-110	0	10 M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2789712 2789713

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92461499040 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	3.0	50	50	50	52.8	53.0	100	100	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.5	2.3	2.3	89	91	90-110	2	10 M1	
Sulfate	mg/L	20.0	50	50	50	70.4	70.6	101	101	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: Plant Hammond

Pace Project No.: 2628190

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond

Pace Project No.: 2628190

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628190001	MW-33	EPA 3010A	42376	EPA 6010D	42392
2628190002	EB-01	EPA 3010A	42376	EPA 6010D	42392
2628190003	FB-01	EPA 3010A	42376	EPA 6010D	42392
2628190001	MW-33	EPA 3005A	42642	EPA 6020B	42652
2628190002	EB-01	EPA 3005A	42642	EPA 6020B	42652
2628190003	FB-01	EPA 3005A	42642	EPA 6020B	42652
2628190001	MW-33	SM 2540C	42383		
2628190002	EB-01	SM 2540C	42383		
2628190003	FB-01	SM 2540C	42383		
2628190001	MW-33	EPA 300.0 Rev 2.1 1993	521472		
2628190002	EB-01	EPA 300.0 Rev 2.1 1993	521472		
2628190003	FB-01	EPA 300.0 Rev 2.1 1993	521472		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 Of 1

Section A Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239 Fax:
 Requested Due Date: Standard 5-day TAT

Section B Required Project Information:
 Report To: Joju Abraham
 Copy To: Lauren Petty, Geosyntec
 Attention: scsinvoices@southernco.com
 Company Name:
 Address:
 Purchase Order #: Plant Hammond
 Project Name:
 Project #: GAW6561
 Face Quote:
 Pace Project Manager: kevin.herring@pacelabs.com,
 Pace Profile #: 2912 (AP)

Section C Invoice Information:
 Regulatory Agency
 State / Location: GA

ITEM #	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES							ANALYSES TEST (Y/N)	Requester Analysis Filtered (Y/N)																						
		START DATE TIME	END DATE TIME				H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other			App. III Metals (1)	Cobalt	TDS, Cl, F, SO4	Residual Chlorine (Y/N)																		
1	MW-33	06/22 13:59	06/22 14:06	G	110	3	1																														
2	EB-01	06/22 14:32	06/22 14:32	G	110	3	1																														
3	FB-01	06/22 14:48	06/22 14:48	G	110	3	1																														
4																																					
5																																					
6																																					
7																																					
8																																					
9																																					
10																																					
11																																					
12																																					

W0# : 2628190

2628190

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP IN C	Received On (Y/N)	Custody (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)
(1) App. III Metals = B, Ca	Grand Walter / Geosyntec	06/22/20	17:10	Yoshia M. Herring / Geosyntec	06/22/20	17:10					
(2) EB-01 and FB-01 will be reported in all SDGs with their respective analyte list.	Yoshia M. Herring / Geosyntec	06/23/20	17:22	Kevin Herring / Geosyntec	06/23/20	12:15					
	Yoshia M. Herring / Geosyntec	06/23/20	15:57	Kevin Herring / Geosyntec	06/23/20	13:57	40	Y	Y	Y	Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Grand Walter
 SIGNATURE of SAMPLER: *Grand Walter*



Sample Condition Upon Receipt

WO#: 2628190

Client Name: Georgia Power

PM: KH Due Date: 02/06/20 CLIENT: 26-GA Power

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

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

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

Thermometer Used TH9 230 Type of Ice: [x] Ice Blue None [] Samples on ice, cooling process has begun

Cooler Temperature 4.0 Biological Tissue is Frozen: Yes No Temp should be above freezing to 6°C

Date and initials of person examining contents: HW 1/23/20

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

March 17, 2020

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

RE: Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 03, 2020 and March 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629701001	HGWA-4	Water	03/02/20 14:25	03/03/20 12:20
2629701002	HGWA-5	Water	03/02/20 10:50	03/03/20 12:20
2629701003	HGWA-6	Water	03/02/20 12:00	03/03/20 12:20
2629701004	MW-23D	Water	03/02/20 13:40	03/03/20 12:20
2629701005	MW-22	Water	03/02/20 16:10	03/03/20 12:20
2629701006	HGWA-1	Water	03/02/20 11:39	03/03/20 12:20
2629701007	HGWA-2	Water	03/02/20 11:10	03/03/20 12:20
2629701008	HGWA-3	Water	03/02/20 13:15	03/03/20 12:20
2629701009	HGWC-16	Water	03/03/20 12:37	03/04/20 10:05
2629701010	HGWC-17	Water	03/03/20 14:20	03/04/20 10:05
2629701011	FB-02	Water	03/03/20 19:07	03/04/20 10:05
2629701012	HGWC-14	Water	03/03/20 11:20	03/04/20 10:05
2629701013	HGWC-15	Water	03/03/20 12:20	03/04/20 10:05
2629701014	HGWC-18	Water	03/03/20 09:10	03/04/20 10:05
2629701015	MW-21D	Water	03/03/20 10:15	03/04/20 10:05
2629701016	FD-01	Water	03/03/20 00:00	03/04/20 10:05

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629701001	HGWA-4	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701002	HGWA-5	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701003	HGWA-6	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701004	MW-23D	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701005	MW-22	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
2629701006	HGWA-1	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701007	HGWA-2	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701008	HGWA-3	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701009	HGWC-16	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701010	HGWC-17	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701011	FB-02	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701012	HGWC-14	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701013	HGWC-15	EPA 6020B	CSW	12	PASI-GA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629701014	HGWC-18	EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
2629701015	MW-21D	EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
2629701016	FD-01	EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2629701001	HGWA-4					
	Field pH	5.63	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.023	mg/L	0.010	03/10/20 19:04	
EPA 6020B	Beryllium	0.00019J	mg/L	0.0030	03/10/20 19:04	
EPA 6020B	Chromium	0.00040J	mg/L	0.010	03/10/20 19:04	
EPA 6020B	Cobalt	0.00063J	mg/L	0.0050	03/10/20 19:04	
EPA 6020B	Lead	0.00026J	mg/L	0.0050	03/10/20 19:04	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	03/10/20 19:04	
2629701002	HGWA-5					
	Field pH	6.80	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.053	mg/L	0.010	03/10/20 19:10	
EPA 6020B	Chromium	0.00050J	mg/L	0.010	03/10/20 19:10	
EPA 6020B	Cobalt	0.00093J	mg/L	0.0050	03/10/20 19:10	
EPA 6020B	Lithium	0.0036J	mg/L	0.030	03/10/20 19:10	
EPA 300.0 Rev 2.1 1993	Fluoride	0.053J	mg/L	0.30	03/07/20 07:19	
2629701003	HGWA-6					
	Field pH	7.67	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.19	mg/L	0.010	03/10/20 19:15	
EPA 6020B	Lithium	0.012J	mg/L	0.030	03/10/20 19:15	
2629701004	MW-23D					
	Field pH	7.05	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.060	mg/L	0.010	03/10/20 19:21	
EPA 6020B	Cobalt	0.0011J	mg/L	0.0050	03/10/20 19:21	
EPA 6020B	Lead	0.000051J	mg/L	0.0050	03/10/20 19:21	
EPA 6020B	Lithium	0.0025J	mg/L	0.030	03/10/20 19:21	
EPA 6020B	Molybdenum	0.0030J	mg/L	0.010	03/10/20 19:21	
2629701005	MW-22					
	Field pH	5.97	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.027	mg/L	0.010	03/10/20 19:27	
EPA 6020B	Cadmium	0.0021J	mg/L	0.0025	03/10/20 19:27	
EPA 6020B	Cobalt	0.043	mg/L	0.0050	03/10/20 19:27	
EPA 6020B	Lead	0.000094J	mg/L	0.0050	03/10/20 19:27	
EPA 6020B	Lithium	0.0015J	mg/L	0.030	03/10/20 19:27	
2629701006	HGWA-1					
	Field pH	7.10	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.034	mg/L	0.010	03/10/20 20:07	
EPA 6020B	Lead	0.000048J	mg/L	0.0050	03/10/20 20:07	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	03/10/20 20:07	
EPA 300.0 Rev 2.1 1993	Fluoride	0.076J	mg/L	0.30	03/10/20 15:07	
2629701007	HGWA-2					
	Field pH	5.43	Std. Units		03/16/20 16:29	
EPA 6020B	Arsenic	0.00043J	mg/L	0.0050	03/10/20 20:13	
EPA 6020B	Barium	0.11	mg/L	0.010	03/10/20 20:13	
EPA 6020B	Beryllium	0.00014J	mg/L	0.0030	03/10/20 20:13	
EPA 6020B	Chromium	0.00041J	mg/L	0.010	03/10/20 20:13	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2629701007	HGWA-2					
EPA 6020B	Cobalt	0.019	mg/L	0.0050	03/10/20 20:13	
EPA 6020B	Lead	0.000095J	mg/L	0.0050	03/10/20 20:13	
EPA 6020B	Lithium	0.0017J	mg/L	0.030	03/10/20 20:13	
2629701008	HGWA-3					
	Field pH	7.12	Std. Units		03/16/20 16:29	
EPA 6020B	Arsenic	0.00040J	mg/L	0.0050	03/10/20 20:18	
EPA 6020B	Barium	0.14	mg/L	0.010	03/10/20 20:18	
EPA 6020B	Lithium	0.0037J	mg/L	0.030	03/10/20 20:18	
2629701009	HGWC-16					
	Field pH	7.1	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.12	mg/L	0.010	03/11/20 17:24	
EPA 6020B	Chromium	0.00071J	mg/L	0.010	03/11/20 17:24	
EPA 6020B	Cobalt	0.00037J	mg/L	0.0050	03/11/20 17:24	
EPA 6020B	Lead	0.00016J	mg/L	0.0050	03/11/20 17:24	
EPA 6020B	Lithium	0.0047J	mg/L	0.030	03/11/20 17:24	
2629701010	HGWC-17					
	Field pH	6.35	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.026	mg/L	0.010	03/11/20 17:30	
EPA 6020B	Chromium	0.0018J	mg/L	0.010	03/11/20 17:30	
EPA 6020B	Cobalt	0.016	mg/L	0.0050	03/11/20 17:30	
EPA 6020B	Lead	0.00013J	mg/L	0.0050	03/11/20 17:30	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	03/11/20 17:30	
EPA 6020B	Thallium	0.00011J	mg/L	0.0010	03/11/20 17:30	
2629701011	FB-02					
EPA 6020B	Chromium	0.00066J	mg/L	0.010	03/11/20 17:36	
2629701012	HGWC-14					
	Field pH	4.77	Std. Units		03/16/20 16:29	
EPA 6020B	Arsenic	0.0035J	mg/L	0.0050	03/11/20 17:41	
EPA 6020B	Barium	0.018	mg/L	0.010	03/11/20 17:41	
EPA 6020B	Beryllium	0.00043J	mg/L	0.0030	03/11/20 17:41	
EPA 6020B	Chromium	0.00042J	mg/L	0.010	03/11/20 17:41	
EPA 6020B	Cobalt	0.029	mg/L	0.0050	03/11/20 17:41	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	03/11/20 17:41	
EPA 6020B	Selenium	0.0045J	mg/L	0.010	03/12/20 16:58	
EPA 6020B	Thallium	0.00026J	mg/L	0.0010	03/11/20 17:41	
2629701013	HGWC-15					
	Field pH	6.00	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.018	mg/L	0.010	03/11/20 17:47	
EPA 6020B	Cadmium	0.0015J	mg/L	0.0025	03/11/20 17:47	
EPA 6020B	Cobalt	0.030	mg/L	0.0050	03/11/20 17:47	
EPA 6020B	Lead	0.000053J	mg/L	0.0050	03/11/20 17:47	
EPA 6020B	Lithium	0.0084J	mg/L	0.030	03/11/20 17:47	
EPA 300.0 Rev 2.1 1993	Fluoride	0.064J	mg/L	0.30	03/11/20 02:28	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2629701014	HGWC-18					
	Field pH	4.55	Std. Units		03/16/20 16:29	
EPA 6020B	Arsenic	0.0057	mg/L	0.0050	03/11/20 17:53	
EPA 6020B	Barium	0.026	mg/L	0.010	03/11/20 17:53	
EPA 6020B	Beryllium	0.0029J	mg/L	0.0030	03/11/20 17:53	
EPA 6020B	Cadmium	0.0021J	mg/L	0.0025	03/11/20 17:53	
EPA 6020B	Chromium	0.00040J	mg/L	0.010	03/11/20 17:53	
EPA 6020B	Cobalt	0.15	mg/L	0.0050	03/11/20 17:53	
EPA 6020B	Lead	0.0013J	mg/L	0.0050	03/11/20 17:53	
EPA 6020B	Lithium	0.012J	mg/L	0.030	03/11/20 17:53	
EPA 6020B	Selenium	0.014	mg/L	0.010	03/12/20 17:04	
EPA 6020B	Thallium	0.00013J	mg/L	0.0010	03/11/20 17:53	
EPA 300.0 Rev 2.1 1993	Fluoride	0.34	mg/L	0.30	03/11/20 02:42	
2629701015	MW-21D					
	Field pH	6.72	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.058	mg/L	0.010	03/11/20 17:58	
EPA 6020B	Lead	0.000047J	mg/L	0.0050	03/11/20 17:58	
EPA 6020B	Lithium	0.026J	mg/L	0.030	03/11/20 17:58	
EPA 6020B	Molybdenum	0.025	mg/L	0.010	03/11/20 17:58	
2629701016	FD-01					
EPA 6020B	Arsenic	0.0055	mg/L	0.0050	03/11/20 18:14	
EPA 6020B	Barium	0.025	mg/L	0.010	03/11/20 18:14	
EPA 6020B	Beryllium	0.0029J	mg/L	0.0030	03/11/20 18:14	
EPA 6020B	Cadmium	0.0016J	mg/L	0.0025	03/11/20 18:14	
EPA 6020B	Chromium	0.037	mg/L	0.010	03/11/20 18:14	
EPA 6020B	Cobalt	0.15	mg/L	0.0050	03/11/20 18:14	
EPA 6020B	Lead	0.0013J	mg/L	0.0050	03/11/20 18:14	
EPA 6020B	Lithium	0.012J	mg/L	0.030	03/11/20 18:14	
EPA 6020B	Selenium	0.013	mg/L	0.010	03/12/20 17:09	
EPA 6020B	Thallium	0.00013J	mg/L	0.0010	03/11/20 18:14	
EPA 300.0 Rev 2.1 1993	Fluoride	0.42	mg/L	0.30	03/11/20 03:10	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWA-4		Lab ID: 2629701001		Collected: 03/02/20 14:25		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	5.63	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:04	7440-38-2	
Barium	0.023	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:04	7440-39-3	
Beryllium	0.00019J	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:04	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:04	7440-43-9	
Chromium	0.00040J	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:04	7440-47-3	
Cobalt	0.00063J	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:04	7440-48-4	
Lead	0.00026J	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:04	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:04	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:04	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:40	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/07/20 07:05	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: HGWA-5		Lab ID: 2629701002		Collected: 03/02/20 10:50		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	6.80	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:10	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:10	7440-38-2	
Barium	0.053	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:10	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:10	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:10	7440-43-9	
Chromium	0.00050J	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:10	7440-47-3	
Cobalt	0.00093J	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:10	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:10	7439-92-1	
Lithium	0.0036J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:10	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:10	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:10	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:10	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:43	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.053J	mg/L	0.30	0.050	1		03/07/20 07:19	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWA-6		Lab ID: 2629701003		Collected: 03/02/20 12:00		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	7.67	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:15	7440-38-2	
Barium	0.19	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:15	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:15	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:15	7439-92-1	
Lithium	0.012J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:15	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:45	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	ND	mg/L	0.30	0.050	1		03/07/20 08:17	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: MW-23D		Lab ID: 2629701004		Collected: 03/02/20 13:40		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	7.05	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:21	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:21	7440-38-2	
Barium	0.060	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:21	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:21	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:21	7440-47-3	
Cobalt	0.0011J	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:21	7440-48-4	
Lead	0.000051J	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:21	7439-92-1	
Lithium	0.0025J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:21	7439-93-2	
Molybdenum	0.0030J	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:21	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:52	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/07/20 08:32	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: MW-22		Lab ID: 2629701005		Collected: 03/02/20 16:10		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	5.97	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:27	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:27	7440-38-2	
Barium	0.027	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:27	7440-41-7	
Cadmium	0.0021J	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:27	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:27	7440-47-3	
Cobalt	0.043	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:27	7440-48-4	
Lead	0.000094J	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:27	7439-92-1	
Lithium	0.0015J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:27	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:27	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:27	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:27	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:55	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/07/20 15:47	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWA-1		Lab ID: 2629701006		Collected: 03/02/20 11:39		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	7.10	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/06/20 09:39	03/10/20 20:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/06/20 09:39	03/10/20 20:07	7440-38-2	
Barium	0.034	mg/L	0.010	0.00049	1	03/06/20 09:39	03/10/20 20:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/06/20 09:39	03/10/20 20:07	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/06/20 09:39	03/10/20 20:07	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/06/20 09:39	03/10/20 20:07	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/06/20 09:39	03/10/20 20:07	7440-48-4	
Lead	0.000048J	mg/L	0.0050	0.000046	1	03/06/20 09:39	03/10/20 20:07	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	03/06/20 09:39	03/10/20 20:07	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/06/20 09:39	03/10/20 20:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/06/20 09:39	03/10/20 20:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/06/20 09:39	03/10/20 20:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 17:19	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.076J	mg/L	0.30	0.050	1		03/10/20 15:07	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: HGWA-2		Lab ID: 2629701007		Collected: 03/02/20 11:10		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	5.43	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/06/20 09:39	03/10/20 20:13	7440-36-0	
Arsenic	0.00043J	mg/L	0.0050	0.00035	1	03/06/20 09:39	03/10/20 20:13	7440-38-2	
Barium	0.11	mg/L	0.010	0.00049	1	03/06/20 09:39	03/10/20 20:13	7440-39-3	
Beryllium	0.00014J	mg/L	0.0030	0.000074	1	03/06/20 09:39	03/10/20 20:13	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/06/20 09:39	03/10/20 20:13	7440-43-9	
Chromium	0.00041J	mg/L	0.010	0.00039	1	03/06/20 09:39	03/10/20 20:13	7440-47-3	
Cobalt	0.019	mg/L	0.0050	0.00030	1	03/06/20 09:39	03/10/20 20:13	7440-48-4	
Lead	0.000095J	mg/L	0.0050	0.000046	1	03/06/20 09:39	03/10/20 20:13	7439-92-1	
Lithium	0.0017J	mg/L	0.030	0.00078	1	03/06/20 09:39	03/10/20 20:13	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/06/20 09:39	03/10/20 20:13	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/06/20 09:39	03/10/20 20:13	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/06/20 09:39	03/10/20 20:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 17:22	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/10/20 15:21	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWA-3		Lab ID: 2629701008		Collected: 03/02/20 13:15		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
Field pH	7.12	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.0030	0.00027	1	03/06/20 09:39	03/10/20 20:18	7440-36-0	
Arsenic	0.00040J	mg/L	0.0050	0.00035	1	03/06/20 09:39	03/10/20 20:18	7440-38-2	
Barium	0.14	mg/L	0.010	0.00049	1	03/06/20 09:39	03/10/20 20:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/06/20 09:39	03/10/20 20:18	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/06/20 09:39	03/10/20 20:18	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/06/20 09:39	03/10/20 20:18	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/06/20 09:39	03/10/20 20:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/06/20 09:39	03/10/20 20:18	7439-92-1	
Lithium	0.0037J	mg/L	0.030	0.00078	1	03/06/20 09:39	03/10/20 20:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/06/20 09:39	03/10/20 20:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/06/20 09:39	03/10/20 20:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/06/20 09:39	03/10/20 20:18	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 17:39	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Fluoride	ND	mg/L	0.30	0.050	1		03/10/20 15:35	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: HGWC-16		Lab ID: 2629701009		Collected: 03/03/20 12:37		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	7.1	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:24	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:24	7440-38-2	
Barium	0.12	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:24	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:24	7440-43-9	
Chromium	0.00071J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:24	7440-47-3	
Cobalt	0.00037J	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:24	7440-48-4	
Lead	0.00016J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:24	7439-92-1	
Lithium	0.0047J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:24	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 17:58	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 01:32	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWC-17		Lab ID: 2629701010		Collected: 03/03/20 14:20		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	6.35	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:30	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:30	7440-38-2	
Barium	0.026	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:30	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:30	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:30	7440-43-9	
Chromium	0.0018J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:30	7440-47-3	
Cobalt	0.016	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:30	7440-48-4	
Lead	0.00013J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:30	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:30	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:30	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:30	7782-49-2	
Thallium	0.00011J	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:30	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 18:01	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 01:46	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: FB-02		Lab ID: 2629701011		Collected: 03/03/20 19:07		Received: 03/04/20 10:05		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:36	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:36	7440-38-2		
Barium	ND	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:36	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:36	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:36	7440-43-9		
Chromium	0.00066J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:36	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:36	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:36	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:36	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:36	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:36	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:36	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 18:10	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 02:00	16984-48-8		

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWC-14		Lab ID: 2629701012		Collected: 03/03/20 11:20		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
Field pH	4.77	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:41	7440-36-0	
Arsenic	0.0035J	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:41	7440-38-2	
Barium	0.018	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:41	7440-39-3	
Beryllium	0.00043J	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:41	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:41	7440-43-9	
Chromium	0.00042J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:41	7440-47-3	
Cobalt	0.029	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:41	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:41	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:41	7439-98-7	
Selenium	0.0045J	mg/L	0.010	0.0013	1	03/10/20 14:34	03/12/20 16:58	7782-49-2	
Thallium	0.00026J	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:41	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 18:13	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 02:14	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: HGWC-15		Lab ID: 2629701013		Collected: 03/03/20 12:20		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	6.00	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:47	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:47	7440-38-2	
Barium	0.018	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:47	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:47	7440-41-7	
Cadmium	0.0015J	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:47	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:47	7440-47-3	
Cobalt	0.030	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:47	7440-48-4	
Lead	0.000053J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:47	7439-92-1	
Lithium	0.0084J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:47	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:47	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:47	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:47	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 18:15	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	0.064J	mg/L	0.30	0.050	1		03/11/20 02:28	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWC-18		Lab ID: 2629701014		Collected: 03/03/20 09:10		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	4.55	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:53	7440-36-0	
Arsenic	0.0057	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:53	7440-38-2	
Barium	0.026	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:53	7440-39-3	
Beryllium	0.0029J	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:53	7440-41-7	
Cadmium	0.0021J	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:53	7440-43-9	
Chromium	0.00040J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:53	7440-47-3	
Cobalt	0.15	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:53	7440-48-4	
Lead	0.0013J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:53	7439-92-1	
Lithium	0.012J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:53	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:53	7439-98-7	
Selenium	0.014	mg/L	0.010	0.0013	1	03/10/20 14:34	03/12/20 17:04	7782-49-2	
Thallium	0.00013J	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:53	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/12/20 11:45	03/13/20 13:08	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.34	mg/L	0.30	0.050	1		03/11/20 02:42	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: MW-21D		Lab ID: 2629701015		Collected: 03/03/20 10:15		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	6.72	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:58	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:58	7440-38-2	
Barium	0.058	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:58	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:58	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:58	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:58	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:58	7440-48-4	
Lead	0.000047J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:58	7439-92-1	
Lithium	0.026J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:58	7439-93-2	
Molybdenum	0.025	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:58	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:58	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/12/20 11:45	03/13/20 13:18	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 02:56	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: FD-01		Lab ID: 2629701016		Collected: 03/03/20 00:00		Received: 03/04/20 10:05		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 18:14	7440-36-0		
Arsenic	0.0055	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 18:14	7440-38-2		
Barium	0.025	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 18:14	7440-39-3		
Beryllium	0.0029J	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 18:14	7440-41-7		
Cadmium	0.0016J	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 18:14	7440-43-9		
Chromium	0.037	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 18:14	7440-47-3		
Cobalt	0.15	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 18:14	7440-48-4		
Lead	0.0013J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 18:14	7439-92-1		
Lithium	0.012J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 18:14	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 18:14	7439-98-7		
Selenium	0.013	mg/L	0.010	0.0013	1	03/10/20 14:34	03/12/20 17:09	7782-49-2		
Thallium	0.00013J	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 18:14	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/12/20 11:45	03/13/20 13:20	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.42	mg/L	0.30	0.050	1		03/11/20 03:10	16984-48-8		

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 44210 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004, 2629701005

METHOD BLANK: 202602 Matrix: Water
Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004, 2629701005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	03/05/20 14:53	

LABORATORY CONTROL SAMPLE: 202603

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 202604 202605

Parameter	Units	2629719006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0026	0.0026	106	106	75-125	0	20	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

QC Batch: 44366 Analysis Method: EPA 7470A
 QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
 Associated Lab Samples: 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012, 2629701013

METHOD BLANK: 203475 Matrix: Water
 Associated Lab Samples: 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012, 2629701013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	03/10/20 17:03	

LABORATORY CONTROL SAMPLE: 203476

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: 203477 203478

Parameter	Units	2629703004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0024	96	97	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 44498 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2629701014, 2629701015, 2629701016

METHOD BLANK: 204276 Matrix: Water
Associated Lab Samples: 2629701014, 2629701015, 2629701016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	03/13/20 13:03	

LABORATORY CONTROL SAMPLE: 204277

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204278 204279

Parameter	Units	204278		204279		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Mercury	mg/L	ND	0.0025	0.0025	0.0025	99	97	75-125	2	20	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

QC Batch: 44279 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008

METHOD BLANK: 202988 Matrix: Water
 Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00029J	0.0030	0.00027	03/10/20 17:38	
Arsenic	mg/L	ND	0.0050	0.00035	03/10/20 17:38	
Barium	mg/L	ND	0.010	0.00049	03/10/20 17:38	
Beryllium	mg/L	ND	0.0030	0.000074	03/10/20 17:38	
Cadmium	mg/L	ND	0.0025	0.00011	03/10/20 17:38	
Chromium	mg/L	ND	0.010	0.00039	03/10/20 17:38	
Cobalt	mg/L	ND	0.0050	0.00030	03/10/20 17:38	
Lead	mg/L	ND	0.0050	0.000046	03/10/20 17:38	
Lithium	mg/L	ND	0.030	0.00078	03/10/20 17:38	
Molybdenum	mg/L	ND	0.010	0.00095	03/10/20 17:38	
Selenium	mg/L	ND	0.010	0.0013	03/10/20 17:38	
Thallium	mg/L	ND	0.0010	0.000052	03/10/20 17:38	

LABORATORY CONTROL SAMPLE: 202989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	109	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	102	80-120	
Beryllium	mg/L	0.1	0.11	105	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 202990 202991

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629679001 Result	Spike Conc.	Spike Conc.	MS Result								
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	107	111	75-125	3	20		
Arsenic	mg/L	ND	0.1	0.1	0.099	0.10	99	101	75-125	2	20		
Barium	mg/L	0.035	0.1	0.1	0.14	0.15	109	110	75-125	1	20		
Beryllium	mg/L	0.000096J	0.1	0.1	0.10	0.11	104	105	75-125	2	20		
Cadmium	mg/L	0.00041J	0.1	0.1	0.10	0.11	102	105	75-125	2	20		

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Parameter	Units	202990		202991		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Chromium	mg/L	0.0013J	0.1	0.1	0.11	0.11	107	108	75-125	2	20	
Cobalt	mg/L	0.00037J	0.1	0.1	0.11	0.11	105	106	75-125	1	20	
Lead	mg/L	0.000074J	0.1	0.1	0.098	0.10	98	101	75-125	3	20	
Lithium	mg/L	ND	0.1	0.1	0.11	0.11	105	106	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.11	103	105	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.095	0.10	95	103	75-125	8	20	
Thallium	mg/L	0.000078J	0.1	0.1	0.10	0.10	100	100	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 44398 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2629701009, 2629701010, 2629701011, 2629701012, 2629701013, 2629701014, 2629701015, 2629701016

METHOD BLANK: 203664 Matrix: Water
Associated Lab Samples: 2629701009, 2629701010, 2629701011, 2629701012, 2629701013, 2629701014, 2629701015, 2629701016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	03/11/20 15:54	
Arsenic	mg/L	ND	0.0050	0.00035	03/11/20 15:54	
Barium	mg/L	ND	0.010	0.00049	03/11/20 15:54	
Beryllium	mg/L	ND	0.0030	0.000074	03/11/20 15:54	
Cadmium	mg/L	ND	0.0025	0.00011	03/11/20 15:54	
Chromium	mg/L	ND	0.010	0.00039	03/11/20 15:54	
Cobalt	mg/L	ND	0.0050	0.00030	03/11/20 15:54	
Lead	mg/L	ND	0.0050	0.000046	03/11/20 15:54	
Lithium	mg/L	ND	0.030	0.00078	03/11/20 15:54	
Molybdenum	mg/L	ND	0.010	0.00095	03/11/20 15:54	
Selenium	mg/L	ND	0.010	0.0013	03/11/20 15:54	
Thallium	mg/L	ND	0.0010	0.000052	03/11/20 15:54	

LABORATORY CONTROL SAMPLE: 203665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	110	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.11	105	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.10	105	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203666 203667

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629703008 Result	Spike Conc.	Spike Conc.	MS Result								
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	107	109	75-125	2	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	103	102	75-125	1	20		
Barium	mg/L	0.090	0.1	0.1	0.19	0.19	98	98	75-125	0	20		
Beryllium	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	1	20		
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	101	75-125	2	20		

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Parameter	Units	203666		203667		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Chromium	mg/L	0.00044J	0.1	0.1	0.11	0.11	107	108	75-125	0	20	
Cobalt	mg/L	0.00094J	0.1	0.1	0.10	0.10	102	104	75-125	2	20	
Lead	mg/L	0.00013J	0.1	0.1	0.095	0.096	95	96	75-125	1	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	0	20	
Molybdenum	mg/L	0.0022J	0.1	0.1	0.10	0.10	99	102	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.11	100	105	75-125	5	20	
Thallium	mg/L	0.000082J	0.1	0.1	0.10	0.10	101	101	75-125	0	20	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

QC Batch: 528851 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004

METHOD BLANK: 2824833 Matrix: Water
 Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	03/07/20 00:18	

LABORATORY CONTROL SAMPLE: 2824834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2824835 2824836

Parameter	Units	92467521066 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	2.6	99	103	90-110	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2824837 2824838

Parameter	Units	92467521076 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	98	98	90-110	0	10	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

QC Batch: 529130 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2629701005

METHOD BLANK: 2826277 Matrix: Water

Associated Lab Samples: 2629701005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	03/07/20 11:50	

LABORATORY CONTROL SAMPLE: 2826278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.3	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826279 2826280

Parameter	Units	92468399001 Result	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec						
Fluoride	mg/L	ND	2.5	2.5	2.1	2.0	81	76	90-110	6	10	M1		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826281 2826282

Parameter	Units	2629733001 Result	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec						
Fluoride	mg/L	ND	2.5	2.5	2.1	2.1	82	85	90-110	3	10	M1		

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

QC Batch: 529175 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2629701006, 2629701007, 2629701008

METHOD BLANK: 2826400 Matrix: Water

Associated Lab Samples: 2629701006, 2629701007, 2629701008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	03/10/20 12:19	

LABORATORY CONTROL SAMPLE: 2826401

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: 2826402 2826403

Parameter	Units	92468470002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	96	99	90-110	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826404 2826405

Parameter	Units	2629679002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	2.7	99	108	90-110	8	10	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

QC Batch: 529391 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2629701009, 2629701010, 2629701011, 2629701012, 2629701013, 2629701014, 2629701015, 2629701016

METHOD BLANK: 2827596 Matrix: Water
 Associated Lab Samples: 2629701009, 2629701010, 2629701011, 2629701012, 2629701013, 2629701014, 2629701015, 2629701016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	03/10/20 23:40	

LABORATORY CONTROL SAMPLE: 2827597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2827598 2827599

Parameter	Units	2629786007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.5	2.6	100	103	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2827600 2827601

Parameter	Units	2629765002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.3	2.4	91	95	90-110	4	10	

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QUALIFIERS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629701001	HGWA-4				
2629701002	HGWA-5				
2629701003	HGWA-6				
2629701004	MW-23D				
2629701005	MW-22				
2629701006	HGWA-1				
2629701007	HGWA-2				
2629701008	HGWA-3				
2629701009	HGWC-16				
2629701010	HGWC-17				
2629701012	HGWC-14				
2629701013	HGWC-15				
2629701014	HGWC-18				
2629701015	MW-21D				
2629701001	HGWA-4	EPA 3005A	44279	EPA 6020B	44313
2629701002	HGWA-5	EPA 3005A	44279	EPA 6020B	44313
2629701003	HGWA-6	EPA 3005A	44279	EPA 6020B	44313
2629701004	MW-23D	EPA 3005A	44279	EPA 6020B	44313
2629701005	MW-22	EPA 3005A	44279	EPA 6020B	44313
2629701006	HGWA-1	EPA 3005A	44279	EPA 6020B	44313
2629701007	HGWA-2	EPA 3005A	44279	EPA 6020B	44313
2629701008	HGWA-3	EPA 3005A	44279	EPA 6020B	44313
2629701009	HGWC-16	EPA 3005A	44398	EPA 6020B	44434
2629701010	HGWC-17	EPA 3005A	44398	EPA 6020B	44434
2629701011	FB-02	EPA 3005A	44398	EPA 6020B	44434
2629701012	HGWC-14	EPA 3005A	44398	EPA 6020B	44434
2629701013	HGWC-15	EPA 3005A	44398	EPA 6020B	44434
2629701014	HGWC-18	EPA 3005A	44398	EPA 6020B	44434
2629701015	MW-21D	EPA 3005A	44398	EPA 6020B	44434
2629701016	FD-01	EPA 3005A	44398	EPA 6020B	44434
2629701001	HGWA-4	EPA 7470A	44210	EPA 7470A	44266
2629701002	HGWA-5	EPA 7470A	44210	EPA 7470A	44266
2629701003	HGWA-6	EPA 7470A	44210	EPA 7470A	44266
2629701004	MW-23D	EPA 7470A	44210	EPA 7470A	44266
2629701005	MW-22	EPA 7470A	44210	EPA 7470A	44266
2629701006	HGWA-1	EPA 7470A	44366	EPA 7470A	44419
2629701007	HGWA-2	EPA 7470A	44366	EPA 7470A	44419
2629701008	HGWA-3	EPA 7470A	44366	EPA 7470A	44419
2629701009	HGWC-16	EPA 7470A	44366	EPA 7470A	44419
2629701010	HGWC-17	EPA 7470A	44366	EPA 7470A	44419
2629701011	FB-02	EPA 7470A	44366	EPA 7470A	44419
2629701012	HGWC-14	EPA 7470A	44366	EPA 7470A	44419
2629701013	HGWC-15	EPA 7470A	44366	EPA 7470A	44419
2629701014	HGWC-18	EPA 7470A	44498	EPA 7470A	44524
2629701015	MW-21D	EPA 7470A	44498	EPA 7470A	44524
2629701016	FD-01	EPA 7470A	44498	EPA 7470A	44524

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629701001	HGWA-4	EPA 300.0 Rev 2.1 1993	528851		
2629701002	HGWA-5	EPA 300.0 Rev 2.1 1993	528851		
2629701003	HGWA-6	EPA 300.0 Rev 2.1 1993	528851		
2629701004	MW-23D	EPA 300.0 Rev 2.1 1993	528851		
2629701005	MW-22	EPA 300.0 Rev 2.1 1993	529130		
2629701006	HGWA-1	EPA 300.0 Rev 2.1 1993	529175		
2629701007	HGWA-2	EPA 300.0 Rev 2.1 1993	529175		
2629701008	HGWA-3	EPA 300.0 Rev 2.1 1993	529175		
2629701009	HGWC-16	EPA 300.0 Rev 2.1 1993	529391		
2629701010	HGWC-17	EPA 300.0 Rev 2.1 1993	529391		
2629701011	FB-02	EPA 300.0 Rev 2.1 1993	529391		
2629701012	HGWC-14	EPA 300.0 Rev 2.1 1993	529391		
2629701013	HGWC-15	EPA 300.0 Rev 2.1 1993	529391		
2629701014	HGWC-18	EPA 300.0 Rev 2.1 1993	529391		
2629701015	MW-21D	EPA 300.0 Rev 2.1 1993	529391		
2629701016	FD-01	EPA 300.0 Rev 2.1 1993	529391		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Pace Analytical

Client Name: GAPower Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 1.0°C
Temp should be above freezing to 5°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/3/20 [Signature]

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 type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<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: Geosyntec Contacts		Section C Invoice Information: Attention: Soulfarm Co. Company Name:	
Email To: SCS Contacts Phone: <input type="checkbox"/> Fax		Purchase Order No.:		Address:	
Requested Due Date/TAT: 10 Day		Project Name: Plant Hammond App. IV Scan Event (AP-2)		Purchase Order:	
		Project Number: 610581		Reference: Pace Project Manager: Kevin Herring Pace Profile #: 29124	
			REGULATORY AGENCY		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="checked" type="checkbox"/> DRINKING WATER <input type="checkbox"/> OTHER <input type="checkbox"/>
			Requested Analysis Filtered (Y/N)		Site Location: _____ STATE: GA

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DW WT WW P S OL WIP AAR OTHER TSS	DATE	TIME	DATE	TIME	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Analysis Test					Residual Chlorine (Y/N)		
							SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME				DATE	TIME	Requested Analysis Filtered (Y/N)					
															Fluoride	Metals 6010/6020*	RAD 226/228		Other	Other
1	HGO-4	(A-Z, 0-9, /, -) Sample IDs MUST BE UNIQUE	MT	6	3-20	1425				4	1	3	X	X	X	X	X			264701
2										4	1	3	X	X	X	X	X			
3										4	1	3	X	X	X	X	X			
4										4	1	3	X	X	X	X	X			
5										4	1	3	X	X	X	X	X			
6										4	1	3	X	X	X	X	X			
7										4	1	3	X	X	X	X	X			
8										4	1	3	X	X	X	X	X			
9										4	1	3	X	X	X	X	X			
10										4	1	3	X	X	X	X	X			
11										4	1	3	X	X	X	X	X			
12										4	1	3	X	X	X	X	X			

ADDITIONAL COMMENTS
 Relinquished by Affiliation: Eric J. [Signature] 3-20-20
 Accepted by Affiliation: Mike May [Signature] 3-20-20
 Date: 3/20/20 Time: 12:00
 Date: 3/22/20 Time: 14:00

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Daron Beeler
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YY): 03/22/2020

TEMPERATURE AND CONDITIONS
 Temp in °C: _____
 Received on Ice (Y/N): _____
 Custody Sealed Cooler (Y/N): _____
 Samples Intact (Y/N): Y

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	Section B Required Project Information: Report To: SCS Contacts	Section C Invoice Information: Attention: Southern Co.	REGULATORY AGENCY NPOES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>	
Address: Atlanta, GA	Copy To: Geosynthetic Contacts	Company Name:	Temp in °C	
Email To: SCS Contacts	Purchase Order No.:	Address:	Received on ice (Y/N)	
Phone:	Project Name: Plant Hammond App. IV Scan Event (A3-3)	State/Zip: GA	Custody Sealed Cooler (Y/N)	
Requested Due Date/Time: 10 Day	Project Number:	Personnel: Pace Project Manager: Kevin Herring Pace Profile #: 291214	Samples Intact (Y/N)	

ITEM #	Section D Required Client Information Sample ID: 4-X-091-1 SAMPLE ID Sample ID MUST BE UNIQUE	Valid Matrix Codes 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)	SAMPLE CONDITIONS
				DATE	TIME							
1	H5-MIA-1	DRINKING WATER WASTE WATER WASTE WATER PRODUCTS OIL WASTE AIR OTHER TISSUE	WT G 2000/1/10/10	1/18	11:50	4	1	1	X	X	X	N/A: 6.8 PD
2	H6-MIA-6		WT G 300/2/20/10/20	2/18	11:40	4	1	3	X	X	X	N/A: 7.117
3	M6-17		WT G 300/2/18/140	2/18	11:40	4	1	3	X	X	X	N/A: 2.81
4	M6-18		WT G 300/2/18/140	2/18	11:40	4	1	3	X	X	X	N/A: 5.787
5	M6-19		WT G 300/2/18/140	2/18	11:40	4	1	3	X	X	X	
6						4	1	3	X	X	X	
7						4	1	3	X	X	X	
8						4	1	3	X	X	X	
9						4	1	3	X	X	X	
10						4	1	3	X	X	X	
11						4	1	3	X	X	X	
12						4	1	3	X	X	X	

Section E Additional Comments: Please note dry wells - strike through any wells not sampled, and note when the last sample for the event has been taken. Notes: As, Ba, Be, Cd, Co, Cr, Hg, Li, Mn, Pb, Se, Si, Tl	RELINQUISHED BY / AFFILIATION: KHA	DATE:	TIME:	ACCEPTED BY / AFFILIATION: Kevin Herring	DATE:	TIME:
SAMPLER NAME AND SIGNATURE PRINT NAME of SAMPLER: Kevin Herring SIGNATURE of SAMPLER: <i>Kevin Herring</i> DATE Signed (MM/DD/YYYY): 03/30/20						

*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.



CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Requested Client Information:	Section B Requested Project Information:	Section C Invoice Information:
Company: GA Power	Report To: SCS Contacts	Attention: Solihem Co.
Address: Atlanta, GA	Copy To: Geosynics Contacts	Company Name:
Email To: SCS Contacts	Purchase Order No.:	Address:
Phone: Fax	Project Name: Plant Hammond App. IV Scan Event	Pace Quote Reference:
Requested Due Date/TAT: 10 Day	Project Number: 6W6581	Pace Project Manager: Kevin Herring
		Pace Profile #: 29124
		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 (see -)
		Site Location: <u>GA</u>
		STATE: <u>GA</u>

ITEM #	Section B Requested Client Information	Section D Valid Matrix Codes	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
					DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl				
1	HGWA-2	DRINKING WATER WATER WASTE WATER WASTE WATER SOIL/SOLID OIL WIPE AIR OTHER TISSUE	VT 6	G	3-2-20	1139		4	4	1	3							2624701 2624714 Pace Project No./ Lab ID.
2								4	1	3								
3								4	1	3								
4								4	1	3								
5								4	1	3								
6								4	1	3								
7								4	1	3								
8								4	1	3								
9								4	1	3								
10								4	1	3								
11								4	1	3								
12								4	1	3								

ADDITIONAL COMMENTS: Includes in AP-1 and AP-2

RELINQUISHED BY / AFFILIATION: *[Signature]* **DATE:** 3-2-20 **TIME:** 1751

ACCEPTED BY / AFFILIATION: *[Signature]* **DATE:** 3-2-20 **TIME:** 1331

SAMPLE CONDITIONS:

SAMPLER NAME AND SIGNATURE	
PRINT NAME OF SAMPLER: Aaron Rieder	DATE Signed: 03/02/2020
SIGNATURE OF SAMPLER: <i>[Signature]</i>	IMMUNITY: 03/02/2020

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

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



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.	
Email To: SCS Contacts Phone: Fax Requested Date Delivered: 10 Day		Purchase Order No.: Project Name: Plant Hammond App. IV Scan Event Project Number: GW658		Address: Pace Quote Reference: Pace Project Manager: Pace Profile #: 29124	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input checked="" type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER			Site Location STATE: GA		

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	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 Na ₂ S ₂ O ₅ Methanol Other	Fluoride			
1	HGWNA-2	WT	3/21/20	0417	3/21/20	11016	4	1	3	X	X	X	N	2629761
2	HGWNA-3	WT	3/21/20	0417	3/21/20	13156	4	1	3	X	X	X	N	2629761
3		WT	3/21/20	0417	3/21/20	13156	4	1	3	X	X	X	N	2629761
4							4	1	3	X	X	X	N	2629761
5							4	1	3	X	X	X	N	2629761
6							4	1	3	X	X	X	N	2629761
7							4	1	3	X	X	X	N	2629761
8							4	1	3	X	X	X	N	2629761
9							4	1	3	X	X	X	N	2629761
10							4	1	3	X	X	X	N	2629761
11							4	1	3	X	X	X	N	2629761
12							4	1	3	X	X	X	N	2629761

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

Relinquished by / Affiliation: *Clark Russo* DATE: *3/21/20* TIME: *1800*

Relinquished by / Affiliation: *Maria Melvin Geosyntec* DATE: *3/21/20* TIME: *1200*

Relinquished by / Affiliation: *Clark Russo* DATE: *03/02/2024* TIME: *1800*

Relinquished by / Affiliation: *Clark Russo* DATE: *03/02/2024* TIME: *1430*

Relinquished by / Affiliation: *Clark Russo* DATE: *03/02/2024* TIME: *1430*

Temp in °C: *12.5*

Received on ice (Y/N): *X*

Custody Sealed Cooler (Y/N): *N*

Samples Intact (Y/N): *Y*

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.

FALL-C-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.

Page: 1 of 1

Section A Required Client Information: Company: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: _____ Requested Due Date/TAT: 10 Day		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosyntec Contacts Purchase Order No.: _____ Project Name: Plant Hammond App. IV Scan Event (AP2) Project Number: GWSR1		Section C Invoice Information: Attention: Southern Co. Company Name: _____ Address: _____ Pica Quote Reference: Kevin Herring Pica Project Manager: _____ Pica Profile #: 2912-4	
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 (see: _____)			Site Location STATE: <u>GA</u>		

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test			Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Temp in °C	Received on (a) (Y/N)	Custody Sealed Color (Y/N)	Samples Intact (Y/N)												
									COLLECTED						Fluoride	Metals 6010/6020*	RAD 226/228																		
									DATE	TIME	DATE	TIME	DATE	TIME										Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other				
1	Sample ID (A-Z, 0-9 / -) SAMPLE IDs MUST BE UNIQUE 160DC-16	DW	6/26	3/30	12:17	3/30	19	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
2	160DC-17	DW	6/26	3/30	13:59	3/30	19	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
3	160DC-18	DW	6/26	3/30	19:05	3/30	19	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
4		DW						4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
5		DW						4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
6		DW						4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
7		DW						4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
8		DW						4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
9		DW						4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
10		DW						4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
11		DW						4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
12		DW						4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												

ADDITIONAL COMMENTS
 Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.
 160DC-16, 17, 18, 19, 20, 21, 22
 Relinquished By / Affiliation: Chad Russo / GCS
 Date: 3/30/2015
 Accepted By / Affiliation: Nadia M. Williams / Geosyntec
 Date: 3/31/2015
 Relinquished By / Affiliation: Kenneth Perkins / Pace
 Date: 3/4/2010
 Accepted By / Affiliation: Kenneth Perkins / Pace
 Date: 3/4/2010

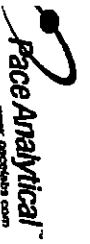
REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER (see: _____)

Site Location
 STATE: GA

Temp in °C
 Received on (a) (Y/N)
 Custody Sealed Color (Y/N)
 Samples Intact (Y/N)

Temp in °C: _____
 Received on (a) (Y/N): _____
 Custody Sealed Color (Y/N): _____
 Samples Intact (Y/N): _____

SAMPLER NAME AND SIGNATURE
 PRINT NAME OF SAMPLER: Chad Russo
 SIGNATURE OF SAMPLER: *[Signature]*
 DATE SIGNED (MANDATORY): 03/30/2015



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Client Information:
 Client Name: 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:
 POC Name:
 POC Title:
 POC Phone #:

Page: 5 of 5

Section D Valid Matrix Codes:
 Matrix Code: (see valid codes to left)
 Sample Type: (G=GRAB C=COMP)

Requested Date/Time: 10 Day

Project Name: Plant Hammond App. IV Scan Event (A-2)
 Project Number: 622521

Requested Analysis Filtered (Y/N):
 Fluoride: N
 Metals 6010/6020*: N
 RAD 228/228: N

REGULATORY AGENCY:
 NPDES GROUND WATER
 UST RCRA
 STATE: GA

ITEM #	Section D Required Client Information	Valid Matrix Codes CODE	MATRIX CODE	SAMPLE TYPE	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test			Residual Chlorine (Y/N)
					DATE	TIME					H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Fluoride	Metals 6010/6020*	
1	FLW-L-14	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
2	FLW-L-15	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
3	FLW-L-16	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
4	FLW-L-17	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
5	FLW-L-18	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
6	FLW-L-19	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
7	FLW-L-20	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
8	FLW-L-21	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
9	FLW-L-22	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
10	FLW-L-23	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
11	FLW-L-24	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401
12	FLW-L-25	DW	WFL 35011110	G	3/27/20	11:30	19	4	1	3	X	X	X	X	X	X	X	X	X	262401

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

REQUISITIONED BY / AFFILIATION: [Handwritten Signature] Date: 3/27/20

ACCEPTED BY / AFFILIATION: [Handwritten Signature] Date: 3/27/20

SAMPLER NAME AND SIGNATURE: [Handwritten Signature] Date: 3/27/20

PRINT Name of SAMPLER: [Handwritten Name] Date Signed: 3/27/20

SIGNATURE of SAMPLER: [Handwritten Signature] Date Signed: 3/27/20

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

F-ALL-0-020rev.07, 15-Feb-2007

March 27, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2629701
Pace Project No.: 30353288

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 05, 2020 and March 06, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 2629701
Pace Project No.: 30353288

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: 2629701
Pace Project No.: 30353288

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629701001	HGWA-4	Water	03/02/20 14:25	03/05/20 09:15
2629701002	HGWA-5	Water	03/02/20 10:50	03/05/20 09:15
2629701003	HGWA-6	Water	03/02/20 12:00	03/05/20 09:15
2629701004	MW-23D	Water	03/02/20 13:40	03/05/20 09:15
2629701005	MW-22	Water	03/02/20 16:10	03/05/20 09:15
2629701006	HGWA-1	Water	03/02/20 11:39	03/05/20 09:15
2629701007	HGWA-2	Water	03/02/20 11:10	03/05/20 09:15
2629701008	HGWA-3	Water	03/02/20 13:15	03/05/20 09:15
2629701009	HGWC-16	Water	03/03/20 12:37	03/06/20 09:30
2629701010	HGWC-17	Water	03/03/20 14:20	03/06/20 09:30
2629701011	FB-02	Water	03/03/20 19:07	03/06/20 09:30
2629701012	HGWC-14	Water	03/03/20 11:20	03/06/20 09:30
2629701013	HGWC-15	Water	03/03/20 12:20	03/06/20 09:30
2629701014	HGWC-18	Water	03/03/20 09:10	03/06/20 09:30
2629701015	MW-21D	Water	03/03/20 10:15	03/06/20 09:30
2629701016	FD-01	Water	03/04/20 00:01	03/06/20 09:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2629701
Pace Project No.: 30353288

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629701001	HGWA-4	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701002	HGWA-5	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701003	HGWA-6	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701004	MW-23D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701005	MW-22	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701006	HGWA-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701007	HGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701008	HGWA-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701009	HGWC-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701010	HGWC-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701011	FB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701012	HGWC-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701013	HGWC-15	EPA 9315	LAL	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: 2629701
Pace Project No.: 30353288

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629701014	HGWC-18	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
2629701015	MW-21D	Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701016	FD-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

Sample: HGWA-4		Lab ID: 2629701001	Collected: 03/02/20 14:25	Received: 03/05/20 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.493 ± 0.277 (0.341) C:97% T:NA	pCi/L	03/12/20 08:32	13982-63-3	
Radium-228	EPA 9320	0.444 ± 0.390 (0.788) C:78% T:83%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	0.937 ± 0.667 (1.13)	pCi/L	03/27/20 14:53	7440-14-4	

Sample: HGWA-5		Lab ID: 2629701002	Collected: 03/02/20 10:50	Received: 03/05/20 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.547 ± 0.290 (0.328) C:93% T:NA	pCi/L	03/12/20 08:32	13982-63-3	
Radium-228	EPA 9320	-0.123 ± 0.373 (0.899) C:74% T:83%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	0.547 ± 0.663 (1.23)	pCi/L	03/27/20 14:53	7440-14-4	

Sample: HGWA-6		Lab ID: 2629701003	Collected: 03/02/20 12:00	Received: 03/05/20 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.676 ± 0.333 (0.389) C:94% T:NA	pCi/L	03/12/20 08:32	13982-63-3	
Radium-228	EPA 9320	-0.000374 ± 0.354 (0.824) C:81% T:79%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	0.676 ± 0.687 (1.21)	pCi/L	03/27/20 14:53	7440-14-4	

Sample: MW-23D		Lab ID: 2629701004	Collected: 03/02/20 13:40	Received: 03/05/20 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.582 ± 0.295 (0.312) C:93% T:NA	pCi/L	03/12/20 09:23	13982-63-3	
Radium-228	EPA 9320	0.382 ± 0.353 (0.714) C:74% T:86%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	0.964 ± 0.648 (1.03)	pCi/L	03/27/20 14:53	7440-14-4	

Sample: MW-22		Lab ID: 2629701005	Collected: 03/02/20 16:10	Received: 03/05/20 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.688 ± 0.330 (0.361) C:91% T:NA	pCi/L	03/12/20 08:32	13982-63-3	
Radium-228	EPA 9320	0.184 ± 0.414 (0.915) C:73% T:90%	pCi/L	03/24/20 19:44	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-22 Lab ID: 2629701005 Collected: 03/02/20 16:10 Received: 03/05/20 09:15 Matrix: Water PWS: Site ID: Sample Type:						
Total Radium	Total Radium Calculation	0.872 ± 0.744 (1.28)	pCi/L	03/27/20 14:53	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-1 Lab ID: 2629701006 Collected: 03/02/20 11:39 Received: 03/05/20 09:15 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.577 ± 0.324 (0.458) C:90% T:NA	pCi/L	03/12/20 08:33	13982-63-3	
Radium-228	EPA 9320	0.0334 ± 0.328 (0.762) C:72% T:85%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	0.610 ± 0.652 (1.22)	pCi/L	03/27/20 14:53	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-2 Lab ID: 2629701007 Collected: 03/02/20 11:10 Received: 03/05/20 09:15 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.903 ± 0.376 (0.345) C:93% T:NA	pCi/L	03/12/20 08:33	13982-63-3	
Radium-228	EPA 9320	0.680 ± 0.497 (0.984) C:71% T:86%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	1.58 ± 0.873 (1.33)	pCi/L	03/27/20 14:53	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-3 Lab ID: 2629701008 Collected: 03/02/20 13:15 Received: 03/05/20 09:15 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.230 ± 0.208 (0.350) C:87% T:NA	pCi/L	03/12/20 08:33	13982-63-3	
Radium-228	EPA 9320	0.0192 ± 0.394 (0.910) C:69% T:87%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	0.249 ± 0.602 (1.26)	pCi/L	03/27/20 14:53	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-16 Lab ID: 2629701009 Collected: 03/03/20 12:37 Received: 03/06/20 09:30 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.707 ± 0.356 (0.434) C:81% T:NA	pCi/L	03/12/20 08:33	13982-63-3	
Radium-228	EPA 9320	0.613 ± 0.467 (0.930) C:73% T:86%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	1.32 ± 0.823 (1.36)	pCi/L	03/27/20 14:53	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

Sample: HGWC-17		Lab ID: 2629701010	Collected: 03/03/20 14:20	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.384 ± 0.261 (0.346) C:80% T:NA	pCi/L	03/12/20 08:33	13982-63-3		
Radium-228	EPA 9320	0.950 ± 0.518 (0.953) C:75% T:84%	pCi/L	03/24/20 19:44	15262-20-1		
Total Radium	Total Radium Calculation	1.33 ± 0.779 (1.30)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: FB-02		Lab ID: 2629701011	Collected: 03/03/20 19:07	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.526 ± 0.294 (0.343) C:84% T:NA	pCi/L	03/12/20 08:33	13982-63-3		
Radium-228	EPA 9320	0.368 ± 0.377 (0.775) C:72% T:79%	pCi/L	03/24/20 19:44	15262-20-1		
Total Radium	Total Radium Calculation	0.894 ± 0.671 (1.12)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: HGWC-14		Lab ID: 2629701012	Collected: 03/03/20 11:20	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	1.29 ± 0.493 (0.593) C:100% T:NA	pCi/L	03/12/20 08:33	13982-63-3		
Radium-228	EPA 9320	0.548 ± 0.407 (0.797) C:72% T:87%	pCi/L	03/24/20 19:45	15262-20-1		
Total Radium	Total Radium Calculation	1.84 ± 0.900 (1.39)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: HGWC-15		Lab ID: 2629701013	Collected: 03/03/20 12:20	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.375 ± 0.258 (0.380) C:87% T:NA	pCi/L	03/12/20 08:35	13982-63-3		
Radium-228	EPA 9320	1.05 ± 0.448 (0.714) C:82% T:79%	pCi/L	03/25/20 14:39	15262-20-1		
Total Radium	Total Radium Calculation	1.43 ± 0.706 (1.09)	pCi/L	03/27/20 13:24	7440-14-4		

Sample: HGWC-18		Lab ID: 2629701014	Collected: 03/03/20 09:10	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	1.38 ± 0.501 (0.531) C:92% T:NA	pCi/L	03/12/20 08:35	13982-63-3		
Radium-228	EPA 9320	0.971 ± 0.394 (0.602) C:80% T:91%	pCi/L	03/25/20 14:39	15262-20-1		

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

Sample: HGWC-18		Lab ID: 2629701014	Collected: 03/03/20 09:10	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	2.35 ± 0.895 (1.13)		pCi/L	03/27/20 13:24	7440-14-4	

Sample: MW-21D		Lab ID: 2629701015	Collected: 03/03/20 10:15	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.965 ± 0.387 (0.352)		pCi/L	03/12/20 08:35	13982-63-3	
		C:97% T:NA					
Radium-228	EPA 9320	0.977 ± 0.412 (0.640)		pCi/L	03/25/20 14:39	15262-20-1	
		C:79% T:85%					
Total Radium	Total Radium Calculation	1.94 ± 0.799 (0.992)		pCi/L	03/27/20 13:24	7440-14-4	

Sample: FD-01		Lab ID: 2629701016	Collected: 03/04/20 00:01	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	2.05 ± 0.607 (0.443)		pCi/L	03/12/20 09:13	13982-63-3	
		C:92% T:NA					
Radium-228	EPA 9320	0.498 ± 0.339 (0.647)		pCi/L	03/25/20 14:39	15262-20-1	
		C:82% T:91%					
Total Radium	Total Radium Calculation	2.55 ± 0.946 (1.09)		pCi/L	03/27/20 13:24	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

QC Batch: 387206	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
Associated Lab Samples: 2629701013, 2629701014, 2629701015, 2629701016	

METHOD BLANK: 1875684	Matrix: Water
Associated Lab Samples: 2629701013, 2629701014, 2629701015, 2629701016	

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.672 ± 0.316 (0.310) C:96% T:NA	pCi/L	03/12/20 08:35	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

QC Batch:	387209	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2629701013, 2629701014, 2629701015, 2629701016		

METHOD BLANK:	1875690	Matrix:	Water
Associated Lab Samples:	2629701013, 2629701014, 2629701015, 2629701016		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.303 ± 0.321 (0.663) C:79% T:80%	pCi/L	03/25/20 14:39	

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

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

QC Batch:	387205	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012		

METHOD BLANK:	1875683	Matrix:	Water
Associated Lab Samples:	2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.605 ± 0.326 (0.434) C:90% T:NA	pCi/L	03/12/20 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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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

QC Batch:	387208	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012		

METHOD BLANK:	1875688	Matrix:	Water
Associated Lab Samples:	2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.275 ± 0.357 (0.757) C:73% T:81%	pCi/L	03/24/20 19:45	

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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without the written consent of Pace Analytical Services, LLC.

QUALIFIERS

Project: 2629701
Pace Project No.: 30353288

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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Chain of Custody

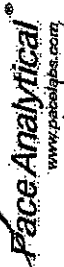
Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA
 Cert. Needed: Yes No
 Owner Received Date: 3/3/2020
 Results Requested By: 9472620

Workorder: 2629701 Workorder Name: PLANT HAMMOND APP IV AP-2

Kevin Herring
 Pace Analytical Charlotte
 9800 Kinney Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-6600



WO#: 30353288



Transfers	Released By	Date/Time	Received By	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N	PRESERVED CONTAINERS		LAB USE ONLY
										HNO3	Other	
1		3/2/2020 14:25	2629701001	Water						X		001
2		3/2/2020 10:50	2629701002	Water						X		002
3		3/2/2020 12:00	2629701003	Water						X		003
4		3/2/2020 13:40	2629701004	Water						X		004
5		3/2/2020 16:10	2629701005	Water						X		005
6		3/2/2020 11:39	2629701006	Water						X		006
7		3/2/2020 11:10	2629701007	Water						X		007
8		3/2/2020 13:15	2629701008	Water						X		008

Upload results from 2629714-001, 2, 3
 for samples 2629701-006, 007, 008.

Transfers Released By Date/Time Received By Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA
 Cert. Needed: Yes No
 Owner Received Date: 3/3/2020 Results Requested By: *21 DWS*

Workorder: 2629701 Workorder Name: PLANT HAMMOND APP IV AP-2

Kevin Herring
 Pace Analytical Charlotte
 9800 Kinsey Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Pace Analytical Prittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-5600



Results Requested By: *21 DWS*

Item #	Sample ID	Sample Type	Collect Date/Time	Matrix	Container	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	HGWA-4	PS	3/2/2020 14:25	Water	2629701001	<i>[Signature]</i>	3-5-20 9:15	X			
2	HGWA-5	PS	3/2/2020 10:50	Water	2629701002	<i>[Signature]</i>		X			
3	HGWA-6	PS	3/2/2020 12:00	Water	2629701003	<i>[Signature]</i>		X			
4	MW-27D	PS	3/2/2020 13:40	Water	2629701004	<i>[Signature]</i>		X			
5	MW-22	PS	3/2/2020 16:10	Water	2629701005	<i>[Signature]</i>		X			

Cooler Temperature on Receipt *N/A* °C Custody Seal *(N)* Received on Ice *(N)* Samples Intact *(Y)* or *(N)*

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this C/COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA

Cert. Needed: Yes No

Workorder: 2629701 Workorder Name: PLANT HAMMOND APP IV AP-2

Results Requested By: 3/17/2020

Report To

Subcontract To

Kevin Herring
Pace Analytical Charlotte
9800 Kincey Ave.
Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2,3, & 4
Greensburg, PA 15601
Phone (724)850-5600

Requested Analysis

WO#: 30353288

PM: JAC Due Date: 03/26/20

CLIENT: PACE_26_ATGA

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			LAB USE ONLY	
						HNO3	Other			
1	HGWA-4	PS	3/2/2020 14:25	2629701001	Water	1				
2	HGWA-5	PS	3/2/2020 10:50	2629701002	Water	1				
3	HGWA-6	PS	3/2/2020 12:00	2629701003	Water	1				
4	MW-27D	PS	3/2/2020 13:40	2629701004	Water	1				
5	MW-22	PS	3/2/2020 16:10	2629701005	Water	1				
6	HGWA-1	PS	3/2/2020 11:39	2629701006	Water		1			
7	HGWA-2	PS	3/2/2020 11:10	2629701007	Water		1			
8	HGWA-3	PS	3/2/2020 13:15	2629701008	Water		1			004
9	HGWC-16	PS	3/3/2020 12:37	2629701009	Water	1				010
10	HGWC-17	PS	3/3/2020 14:20	2629701010	Water	1				011
11	FB-02	PS	3/3/2020 19:07	2629701011	Water	1				012
12	HGWC-14	PS	3/3/2020 11:20	2629701012	Water	1				013
13	HGWC-15	PS	3/3/2020 12:20	2629701013	Water	1				014
14	HGWC-18	PS	3/3/2020 09:10	2629701014	Water	1				015
15	MW-21D	PS	3/3/2020 10:15	2629701015	Water	1				016
16	FD-01	PS	3/4/2020 00:00	2629701016	Water	1				

RAD 9315

RAD 9320

WD # 30353288

Transfers		Released By	Date/Time	Received By	Date/Time	Comments	
1		<i>[Signature]</i>	3/5/2017 00	<i>[Signature]</i>	3/6/2017 00		
2							
3							
Cooler Temperature on Receipt		°C		Custody Seal	Y or N	Received on Ice	Y or N
							Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace NC

Project # 30353288

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1857 9506 7400

Label	<u>ML</u>
LIMS Login	<u>ML</u>

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp °C Correction Factor: °C Final Temp: °C

Temp should be above freezing to 8°C

pH paper Lot# <u>10D2191</u>	Date and Initials of person examining contents: <u>ML 3-5-20</u>
---------------------------------	---

Comments:

	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>PH12</u>
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>ML</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>ML</u> Date: <u>3-5-20</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
 *PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace NC

Project # 3035328

8
BM
3-6-2020

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1857 9506 7400

Label DK
LIMS Login DK

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp °C Correction Factor: °C Final Temp: °C

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents:
	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. <u>1002191</u>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID Matrix: <u>WI</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.
Hex Cr Aqueous sample field filtered	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>PHLZ</u>
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>DK</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>DK</u> Date: <u>3-5-20</u>

Client Notification/ Resolution:

Person-Contacted: _____ Date/Time: _____ Contacted-By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

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

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace GA

Project # 30353288

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1657 9506 8083

Label	<u>JSM</u>
LIMS Login	<u>NMR</u>

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

Thermometer Used _____ Type of Ice: Wet Blue None

Cooler Temperature _____ Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 8°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:
				<u>10D0391</u>	<u>JSM 3/6/2020</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Correct Containers Used: -Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>pH < 2</u>	
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>JSM</u>	Date/time of preservation: _____
				Lot # of added preservative: _____	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>JSM</u>	Date: <u>3/6/2020</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

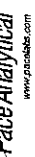
Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

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

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Quality Control Sample Performance Assessment



Analyst: Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 3/11/2020
Worklist: 52794
Matrix: DW

Method Blank Assessment	
MB Sample ID	1875683
MB concentration:	0.605
M/B Counting Uncertainty:	0.314
MB MDC:	0.434
MB Numerical Performance Indicator:	3.78
MB Status vs. Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCS# (Y or N)?	Y
LCS52794	LCS52794
3/12/2020	3/12/2020
Count Date:	19-033
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.050
Volume Used (mL):	0.10
Aliquot Volume (L, B, F):	0.508
Target Conc. (pCi/L, g, F):	4.736
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	5.759
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.851
Numerical Performance Indicator:	2.35
Percent Recovery:	121.60%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS52794
Duplicate Sample I.D.:	LCS52794
Sample Result (pCi/L, g, F):	5.759
Sample Duplicate Result (pCi/L, g, F):	0.851
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.415
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	2.296
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	25.78%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

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

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

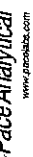
N/A 03/12/20

OK 03/12/20

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.:	
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 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
Sample Matrix Spike Duplicate Result:	Sample Matrix Spike Duplicate Result
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):	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:	(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: LAL
Date: 3/11/2020
Worklist: 52794
Matrix: DW

Method Blank Assessment	
MB Sample ID	1875683
MB concentration:	0.605
MB Counting Uncertainty:	0.314
MB MDC:	0.434
MB Numerical Performance Indicator:	3.78
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSD52794	LCSD52794
Count Date:	3/7/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.050
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.508
Target Conc. (pCi/L, g, F):	4.736
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	5.759
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.851
Numerical Performance Indicator:	2.35
Percent Recovery:	121.60%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2629679001
Duplicate Sample I.D.:	2629679001DUP
Sample Result (pCi/L, g, F):	0.267
Sample Result Counting Uncertainty (pCi/L, g, F):	0.290
Sample Duplicate Result (pCi/L, g, F):	0.676
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.313
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	4.977
Duplicate RPD:	86.67%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

* The method blank result is below the reporting limit for this analysis and is acceptable.
*** Batch must be re-prepped due to unacceptable precision.

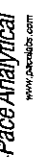
Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date:</p> <p>Sample I.D.:</p> <p>Sample MS I.D.:</p> <p>Sample MSD I.D.:</p> <p>Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL):</p> <p>Spike Volume Used in MS (mL):</p> <p>Spike Volume Used in MSD (mL):</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:</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 Result 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>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 Result Counting Uncertainty (pCi/L, g, F):</p> <p>Matrix Spike Duplicate Result Numerical Performance Indicator:</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>

LAL 3/11/20

[Handwritten signatures]

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 3/11/2020
Worklist: 52795
Matrix: DW

Method Blank Assessment	
MB Sample ID	1875684
MB concentration:	0.672
M/B Counting Uncertainty:	0.300
MB MDC:	0.310
MB Numerical Performance Indicator:	4.38
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSD52795	LCSD52795
Count Date:	3/12/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.050
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.501
Target Conc. (pCi/L, g, F):	4.800
Uncertainty (Calculated):	0.058
Result (pCi/L, g, F):	5.017
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.798
Numerical Performance Indicator:	0.53
Percent Recovery:	104.52%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2629701016
Duplicate Sample I.D.:	2629701016DUP
Sample Result (pCi/L, g, F):	2.053
Sample Result Counting Uncertainty (pCi/L, g, F):	0.529
Sample Duplicate Result (pCi/L, g, F):	1.349
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.436
Are sample and/or duplicate results below RL?:	See Below ##
Duplicate Numerical Performance Indicator:	2.012
Duplicate RPD:	41.39%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

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

***Batch method blank prepared duplicate unacceptable precision.

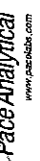
M/A-C3/12/20

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

VAM 3/12/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 3/11/2020
Worklist: 52795
Matrix: DW

Method Blank Assessment	
MB Sample ID	1875684
MB concentration:	0.672
MB Counting Uncertainty:	0.300
MB MDC:	0.310
MB Numerical Performance Indicator:	4.38
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
Count Date:	3/12/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.050
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.507
Target Conc. (pCi/L, g, F):	4.800
Uncertainty (Calculated):	0.058
Result (pCi/L, g, F):	5.017
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.798
Numerical Performance Indicator:	0.53
Percent Recovery:	104.52%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS52795
Duplicate Sample I.D.:	LCS52795
Sample Result (pCi/L, g, F):	5.017
Sample Result Counting Uncertainty (pCi/L, g, F):	0.798
Sample Duplicating Result (pCi/L, g, F):	5.026
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.806
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.016
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	1.27%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

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

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
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:	
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:	

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 3/13/2020
Worklist: 52796
Matrix: WT

Method Blank Assessment	
MB Sample ID	1875688
MB concentration:	0.275
M/B 2 Sigma CSU:	0.357
MB MDC:	0.757
MB Numerical Performance Indicator:	1.51
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	Y
LCSD52796	3/24/2020
Count Date:	3/24/2020
Spike I.D.:	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.729
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.809
Target Conc. (pCi/L, g, F):	4.315
Uncertainty (Calculated):	0.309
Result (pCi/L, g, F):	3.349
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.938
Numerical Performance Indicator:	-5.68
Percent Recovery:	77.98%
Status vs Numerical Indicator:	Fail**
Upper % Recovery Limits:	135%
Lower % Recovery Limits:	60%

Duplicate Sample Assessment	
Sample I.D.:	LCSD52796
Duplicate Sample ID:	LCSD52796
Sample Result (pCi/L, g, F):	2.200
Sample Duplicate Result (pCi/L, g, F):	0.658
Sample Duplicate Result 2 (pCi/L, g, F):	3.349
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.938
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.964
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	41.86%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Fail***
% RPD Limit:	36%

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 (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:
Sample Matrix Spike Duplicate Result:	Sample Matrix Spike Duplicate Result:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
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:

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.

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3/27/20*

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Quality Control Sample Performance Assessment



Test: Ra-228
Analyst: VAL
Date: 3/25/2020
Worklist: 52796
Matrix:

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment

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

LCSD (Y or N)?	Y
LCSD52796	3/27/2020
Count Date:	3/27/2020
Spike I.D.:	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.689
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.808
Target Conc. (pCi/L, g, F):	4.290
Uncertainty (Calculated):	0.309
Result (pCi/L, g, F):	3.410
Numerical Performance Indicator:	84.79%
Status vs Numerical Indicator:	N/A
Upper % Recovery Limits:	Pass
Lower % Recovery Limits:	135%
	60%

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 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/MSD Upper % Recovery Limits:
MS/MSD Lower % Recovery Limits:

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 Status vs Numerical Indicator:
Duplicate Status vs RPD:
% RPD Limit:

Enter Duplicate sample IDs if other than LCS/LCSD in the space below.

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:

Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

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

Comments:

Quality Control Sample Performance Assessment

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

Test: Ra-228
Analyst: VAL
Date: 3/13/2020
Worklist: 52797
Matrix: WT



Method Blank Assessment	
MB Sample ID	1875690
MB concentration:	0.303
M/B 2 Sigma CSU:	0.321
MB MDC:	0.653
MB Numerical Performance Indicator:	1.85
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD52797	Y
Count Date:	3/25/2020	LCSD52797
Spike I.D.:	19-057	3/25/2020
Decay Corrected Spike Concentration (pCi/mL):	34.720	19-057
Volume Used (mL):	0.10	34.720
Aliquot Volume (L, g, F):	0.810	0.10
Target Conc. (pCi/L, g, F):	4.288	0.810
Uncertainty (Calculated):	0.309	4.285
Result (pCi/L, g, F):	2.886	0.308
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	0.783	3.789
Numerical Performance Indicator:	-3.27	0.907
Percent Recovery:	67.30%	-1.02
Status vs Numerical Indicator:	N/A	88.42%
Status vs Recovery:	Pass	N/A
Upper % Recovery Limits:	135%	Pass
Lower % Recovery Limits:	50%	60%

Duplicate Sample Assessment	
Sample I.D.:	LCSD52797
Duplicate Sample I.D.:	LCSD52797
Sample Result (pCi/L, g, F):	2.886
Sample Duplicate Result (pCi/L, g, F):	0.783
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	3.789
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.477
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	27.13%
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/initials

July 08, 2020

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

RE: Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 26, 2020 and April 02, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Asheville
- Pace Analytical Services - Atlanta, GA

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

Sincerely,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2630472001	HGWA-1	Water	03/25/20 15:56	03/26/20 11:10
2630472002	HGWA-3	Water	03/25/20 15:17	03/26/20 11:10
2630472003	HGWA-2	Water	03/25/20 16:32	03/26/20 11:10
2630472004	HGWA-6	Water	03/25/20 17:15	03/26/20 11:10
2630472005	HGWA-5	Water	03/26/20 09:20	03/27/20 13:00
2630472006	HGWA-4	Water	03/26/20 12:55	03/27/20 13:00
2630472007	HGWC-15	Water	03/26/20 14:45	03/27/20 13:00
2630472008	MW-22	Water	03/27/20 16:10	03/30/20 10:20
2630472009	HGWC-14	Water	03/30/20 09:55	03/31/20 11:35
2630472010	FD-02	Water	03/30/20 00:00	03/31/20 11:35
2630472011	HGWC-16	Water	03/30/20 11:25	03/31/20 11:35
2630472012	FB-02	Water	03/30/20 17:35	03/31/20 11:35
2630472013	HGWC-17	Water	03/31/20 09:00	04/01/20 10:30
2630472014	HGWC-18	Water	03/31/20 13:30	04/01/20 10:30
2630472015	MW-21D	Water	04/01/20 12:04	04/02/20 10:25
2630472016	MW-33	Water	04/01/20 10:02	04/02/20 10:25
2630472017	MW-23D	Water	04/01/20 11:37	04/02/20 10:25

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630472001	HGWA-1	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472002	HGWA-3	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472003	HGWA-2	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472004	HGWA-6	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472005	HGWA-5	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	TC1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472006	HGWA-4	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	TC1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472007	HGWC-15	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	TC1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472008	MW-22	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	TC1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472009	HGWC-14	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2630472010	FD-02	EPA 6010D	DRB	1	PASI-GA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630472011	HGWC-16	EPA 6020B	CSW	12	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	ALW	1	PASI-GA
2630472012	FB-02	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
2630472013	HGWC-17	EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
2630472014	HGWC-18	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
2630472015	MW-21D	EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
2630472016	MW-33	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
2630472017	MW-23D	EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-GA = Pace Analytical Services - Atlanta, GA

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630472001	HGWA-1					
	Field pH	6.95	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	127	mg/L	1.0	04/02/20 13:58	
EPA 6020B	Barium	0.043	mg/L	0.010	04/02/20 20:39	
EPA 6020B	Boron	0.025J	mg/L	0.10	04/02/20 20:39	
EPA 6020B	Chromium	0.00072J	mg/L	0.010	04/02/20 20:39	
EPA 6020B	Lithium	0.00083J	mg/L	0.030	04/02/20 20:39	
SM 2540C	Total Dissolved Solids	496	mg/L	10.0	04/01/20 15:05	
EPA 300.0 Rev 2.1 1993	Chloride	20.4	mg/L	1.0	04/03/20 00:17	M1
EPA 300.0 Rev 2.1 1993	Fluoride	0.098J	mg/L	0.30	04/03/20 00:17	
EPA 300.0 Rev 2.1 1993	Sulfate	85.9	mg/L	1.0	04/03/20 00:17	
2630472002	HGWA-3					
	Field pH	7.4	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	89.8	mg/L	1.0	04/02/20 14:01	
EPA 6020B	Barium	0.13	mg/L	0.010	04/02/20 20:56	
EPA 6020B	Boron	0.0096J	mg/L	0.10	04/02/20 20:56	
EPA 6020B	Lithium	0.0035J	mg/L	0.030	04/02/20 20:56	
SM 2540C	Total Dissolved Solids	284	mg/L	10.0	04/01/20 15:05	
EPA 300.0 Rev 2.1 1993	Chloride	6.1	mg/L	1.0	04/03/20 01:01	
EPA 300.0 Rev 2.1 1993	Sulfate	50.5	mg/L	1.0	04/03/20 01:01	
2630472003	HGWA-2					
	Field pH	5.36	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	23.0	mg/L	1.0	04/02/20 14:05	
EPA 6020B	Barium	0.12	mg/L	0.010	04/02/20 21:02	
EPA 6020B	Beryllium	0.00016J	mg/L	0.0030	04/02/20 21:02	
EPA 6020B	Boron	0.039J	mg/L	0.10	04/02/20 21:02	
EPA 6020B	Cadmium	0.00014J	mg/L	0.0025	04/02/20 21:02	
EPA 6020B	Cobalt	0.020	mg/L	0.0050	04/02/20 21:02	
EPA 6020B	Lead	0.00011J	mg/L	0.0050	04/02/20 21:02	
EPA 6020B	Lithium	0.0017J	mg/L	0.030	04/02/20 21:02	
SM 2540C	Total Dissolved Solids	138	mg/L	10.0	04/01/20 15:06	
EPA 300.0 Rev 2.1 1993	Chloride	5.2	mg/L	1.0	04/03/20 01:46	
EPA 300.0 Rev 2.1 1993	Sulfate	46.3	mg/L	1.0	04/03/20 01:46	
2630472004	HGWA-6					
	Field pH	7.39	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	58.1	mg/L	1.0	04/02/20 14:08	
EPA 6020B	Barium	0.19	mg/L	0.010	04/03/20 13:16	
EPA 6020B	Boron	0.021J	mg/L	0.10	04/03/20 13:16	
EPA 6020B	Lithium	0.011J	mg/L	0.030	04/03/20 13:16	
EPA 6020B	Thallium	0.000057J	mg/L	0.0010	04/03/20 13:16	
SM 2540C	Total Dissolved Solids	240	mg/L	10.0	04/01/20 15:09	
EPA 300.0 Rev 2.1 1993	Chloride	1.2	mg/L	1.0	04/03/20 02:01	
EPA 300.0 Rev 2.1 1993	Sulfate	35.1	mg/L	1.0	04/03/20 02:01	
2630472005	HGWA-5					
	Field pH	6.38	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	27.8	mg/L	1.0	04/02/20 17:25	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630472005	HGWA-5					
EPA 6020B	Barium	0.045	mg/L	0.010	04/02/20 22:12	
EPA 6020B	Boron	0.0072J	mg/L	0.10	04/02/20 22:12	
EPA 6020B	Cobalt	0.0013J	mg/L	0.0050	04/02/20 22:12	
EPA 6020B	Lithium	0.0029J	mg/L	0.030	04/02/20 22:12	
SM 2540C	Total Dissolved Solids	104	mg/L	10.0	04/02/20 15:00	
EPA 300.0 Rev 2.1 1993	Chloride	1.4	mg/L	1.0	04/02/20 21:49	
EPA 300.0 Rev 2.1 1993	Fluoride	0.066J	mg/L	0.30	04/02/20 21:49	
EPA 300.0 Rev 2.1 1993	Sulfate	21.6	mg/L	1.0	04/02/20 21:49	
2630472006	HGWA-4					
	Field pH	5.77	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	14.9	mg/L	1.0	04/03/20 14:51	
EPA 6020B	Barium	0.026	mg/L	0.010	04/02/20 22:18	
EPA 6020B	Beryllium	0.000076J	mg/L	0.0030	04/02/20 22:18	
EPA 6020B	Boron	0.012J	mg/L	0.10	04/02/20 22:18	
EPA 6020B	Cobalt	0.00058J	mg/L	0.0050	04/02/20 22:18	
EPA 6020B	Lead	0.000059J	mg/L	0.0050	04/02/20 22:18	
EPA 6020B	Lithium	0.00095J	mg/L	0.030	04/02/20 22:18	
SM 2540C	Total Dissolved Solids	69.0	mg/L	10.0	04/02/20 15:00	D6
EPA 300.0 Rev 2.1 1993	Chloride	3.4	mg/L	1.0	04/02/20 22:04	
2630472007	HGWC-15					
	Field pH	6.03	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	240	mg/L	1.0	04/02/20 17:56	
EPA 6020B	Barium	0.016	mg/L	0.010	04/02/20 22:24	
EPA 6020B	Boron	2.1	mg/L	0.10	04/02/20 22:24	
EPA 6020B	Cadmium	0.0016J	mg/L	0.0025	04/02/20 22:24	
EPA 6020B	Cobalt	0.022	mg/L	0.0050	04/02/20 22:24	
EPA 6020B	Lithium	0.0061J	mg/L	0.030	04/02/20 22:24	
SM 2540C	Total Dissolved Solids	1000	mg/L	10.0	04/02/20 15:00	
EPA 300.0 Rev 2.1 1993	Chloride	142	mg/L	9.0	04/03/20 09:30	
EPA 300.0 Rev 2.1 1993	Sulfate	438	mg/L	9.0	04/03/20 09:30	
2630472008	MW-22					
	Field pH	5.71	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	212	mg/L	1.0	04/03/20 22:36	
EPA 6020B	Barium	0.025	mg/L	0.010	04/03/20 16:59	
EPA 6020B	Boron	2.4	mg/L	0.10	04/03/20 16:59	
EPA 6020B	Cadmium	0.0019J	mg/L	0.0025	04/03/20 16:59	
EPA 6020B	Cobalt	0.025	mg/L	0.0050	04/03/20 16:59	
EPA 6020B	Lithium	0.0013J	mg/L	0.030	04/03/20 16:59	
SM 2540C	Total Dissolved Solids	1100	mg/L	10.0	04/02/20 17:56	
EPA 300.0 Rev 2.1 1993	Chloride	141	mg/L	8.0	04/03/20 13:31	
EPA 300.0 Rev 2.1 1993	Sulfate	419	mg/L	8.0	04/03/20 13:31	
2630472009	HGWC-14					
	Field pH	4.57	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	600	mg/L	10.0	04/06/20 13:38	
EPA 6020B	Arsenic	0.0051	mg/L	0.0050	04/02/20 16:04	B

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630472009	HGWC-14					
EPA 6020B	Barium	0.020	mg/L	0.010	04/02/20 16:04	
EPA 6020B	Beryllium	0.00043J	mg/L	0.0030	04/02/20 16:04	
EPA 6020B	Boron	11.7	mg/L	1.0	04/03/20 10:30	
EPA 6020B	Chromium	0.00066J	mg/L	0.010	04/02/20 16:04	
EPA 6020B	Cobalt	0.028	mg/L	0.0050	04/02/20 16:04	
EPA 6020B	Lead	0.0015J	mg/L	0.0050	04/02/20 16:04	
EPA 6020B	Selenium	0.0049J	mg/L	0.010	04/02/20 16:04	
EPA 6020B	Thallium	0.00028J	mg/L	0.0010	04/02/20 16:04	
SM 2540C	Total Dissolved Solids	2590	mg/L	10.0	04/06/20 18:46	
EPA 300.0 Rev 2.1 1993	Chloride	236	mg/L	22.0	04/05/20 07:37	
EPA 300.0 Rev 2.1 1993	Fluoride	0.092J	mg/L	0.30	04/04/20 17:18	
EPA 300.0 Rev 2.1 1993	Sulfate	1150	mg/L	22.0	04/05/20 07:37	
2630472010	FD-02					
EPA 6010D	Calcium	607	mg/L	10.0	04/06/20 13:41	
EPA 6020B	Arsenic	0.0048J	mg/L	0.0050	04/02/20 16:10	B
EPA 6020B	Barium	0.019	mg/L	0.010	04/02/20 16:10	
EPA 6020B	Beryllium	0.00040J	mg/L	0.0030	04/02/20 16:10	
EPA 6020B	Boron	11.5	mg/L	1.0	04/03/20 10:36	
EPA 6020B	Cadmium	0.00012J	mg/L	0.0025	04/02/20 16:10	
EPA 6020B	Chromium	0.00041J	mg/L	0.010	04/02/20 16:10	
EPA 6020B	Cobalt	0.027	mg/L	0.0050	04/02/20 16:10	
EPA 6020B	Lead	0.0014J	mg/L	0.0050	04/02/20 16:10	
EPA 6020B	Selenium	0.0054J	mg/L	0.010	04/02/20 16:10	
EPA 6020B	Thallium	0.00027J	mg/L	0.0010	04/02/20 16:10	
SM 2540C	Total Dissolved Solids	2480	mg/L	10.0	04/06/20 18:46	
EPA 300.0 Rev 2.1 1993	Chloride	233	mg/L	22.0	04/05/20 07:51	
EPA 300.0 Rev 2.1 1993	Fluoride	0.13J	mg/L	0.30	04/04/20 17:33	
EPA 300.0 Rev 2.1 1993	Sulfate	1130	mg/L	22.0	04/05/20 07:51	
2630472011	HGWC-16					
	Field pH	7.09	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	208	mg/L	1.0	04/03/20 20:33	
EPA 6020B	Arsenic	0.0011J	mg/L	0.0050	04/02/20 16:15	B
EPA 6020B	Barium	0.11	mg/L	0.010	04/02/20 16:15	
EPA 6020B	Boron	2.4	mg/L	0.10	04/02/20 16:15	
EPA 6020B	Chromium	0.00040J	mg/L	0.010	04/02/20 16:15	
EPA 6020B	Lead	0.000073J	mg/L	0.0050	04/02/20 16:15	
EPA 6020B	Lithium	0.0041J	mg/L	0.030	04/02/20 16:15	
SM 2540C	Total Dissolved Solids	787	mg/L	10.0	04/06/20 18:46	
EPA 300.0 Rev 2.1 1993	Chloride	80.2	mg/L	1.0	04/04/20 17:47	
EPA 300.0 Rev 2.1 1993	Fluoride	0.059J	mg/L	0.30	04/04/20 17:47	
EPA 300.0 Rev 2.1 1993	Sulfate	223	mg/L	5.0	04/05/20 08:06	
2630472012	FB-02					
EPA 6020B	Boron	0.032J	mg/L	0.10	04/02/20 16:21	
EPA 6020B	Chromium	0.00059J	mg/L	0.010	04/02/20 16:21	

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL
 Pace Project No.: 2630472

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630472013	HGWC-17					
	Field pH	6.28	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	328	mg/L	10.0	04/03/20 17:12	
EPA 6020B	Arsenic	0.00080J	mg/L	0.0050	04/08/20 18:17	B
EPA 6020B	Barium	0.029	mg/L	0.010	04/08/20 18:17	
EPA 6020B	Boron	6.9	mg/L	0.50	04/09/20 10:45	
EPA 6020B	Cobalt	0.016	mg/L	0.0050	04/08/20 18:17	
EPA 6020B	Lead	0.000077J	mg/L	0.0050	04/08/20 18:17	
EPA 6020B	Lithium	0.00090J	mg/L	0.030	04/08/20 18:17	
EPA 6020B	Thallium	0.00014J	mg/L	0.0010	04/08/20 18:17	
SM 2540C	Total Dissolved Solids	1310	mg/L	10.0	04/07/20 12:18	
EPA 300.0 Rev 2.1 1993	Chloride	161	mg/L	10.0	04/05/20 09:34	
EPA 300.0 Rev 2.1 1993	Sulfate	484	mg/L	10.0	04/05/20 09:34	
2630472014	HGWC-18					
	Field pH	4.43	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	418	mg/L	10.0	04/03/20 17:15	
EPA 6020B	Arsenic	0.0056	mg/L	0.0050	04/08/20 18:22	B
EPA 6020B	Barium	0.029	mg/L	0.010	04/08/20 18:22	
EPA 6020B	Beryllium	0.0030	mg/L	0.0030	04/08/20 18:22	
EPA 6020B	Boron	9.4	mg/L	0.50	04/09/20 10:51	
EPA 6020B	Cadmium	0.0017J	mg/L	0.0025	04/08/20 18:22	
EPA 6020B	Cobalt	0.16	mg/L	0.0050	04/08/20 18:22	
EPA 6020B	Lead	0.0014J	mg/L	0.0050	04/08/20 18:22	
EPA 6020B	Lithium	0.012J	mg/L	0.030	04/08/20 18:22	
EPA 6020B	Selenium	0.019	mg/L	0.010	04/08/20 18:22	
EPA 6020B	Thallium	0.00015J	mg/L	0.0010	04/08/20 18:22	
SM 2540C	Total Dissolved Solids	1860	mg/L	10.0	04/07/20 12:18	
EPA 300.0 Rev 2.1 1993	Chloride	126	mg/L	19.0	04/05/20 10:15	
EPA 300.0 Rev 2.1 1993	Fluoride	0.45	mg/L	0.30	04/04/20 19:32	
EPA 300.0 Rev 2.1 1993	Sulfate	934	mg/L	19.0	04/05/20 10:15	
2630472015	MW-21D					
	Field pH	6.90	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	438	mg/L	10.0	04/07/20 16:20	
EPA 6020B	Arsenic	0.0013J	mg/L	0.0050	04/08/20 19:08	B
EPA 6020B	Barium	0.066	mg/L	0.010	04/08/20 19:08	
EPA 6020B	Boron	6.3	mg/L	0.50	04/09/20 11:08	
EPA 6020B	Lead	0.000048J	mg/L	0.0050	04/08/20 19:08	
EPA 6020B	Lithium	0.026J	mg/L	0.030	04/08/20 19:08	
EPA 6020B	Molybdenum	0.024	mg/L	0.010	04/08/20 19:08	
SM 2540C	Total Dissolved Solids	1940	mg/L	10.0	04/07/20 12:20	
EPA 300.0 Rev 2.1 1993	Chloride	236	mg/L	18.0	04/05/20 07:00	
EPA 300.0 Rev 2.1 1993	Sulfate	889	mg/L	18.0	04/05/20 07:00	
2630472016	MW-33					
	Field pH	4.35	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	567	mg/L	10.0	04/07/20 16:24	
EPA 6020B	Arsenic	0.0061	mg/L	0.0050	04/08/20 19:25	B
EPA 6020B	Barium	0.027	mg/L	0.010	04/08/20 19:25	

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2630472016	MW-33					
EPA 6020B	Beryllium	0.0011J	mg/L	0.0030	04/08/20 19:25	
EPA 6020B	Boron	11.6	mg/L	1.0	04/09/20 11:14	
EPA 6020B	Cadmium	0.00022J	mg/L	0.0025	04/08/20 19:25	
EPA 6020B	Chromium	0.00069J	mg/L	0.010	04/08/20 19:25	
EPA 6020B	Cobalt	0.058	mg/L	0.0050	04/08/20 19:25	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	04/08/20 19:25	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	04/08/20 19:25	
EPA 6020B	Selenium	0.011	mg/L	0.010	04/08/20 19:25	
EPA 6020B	Thallium	0.00029J	mg/L	0.0010	04/08/20 19:25	
SM 2540C	Total Dissolved Solids	2590	mg/L	10.0	04/07/20 12:20	
EPA 300.0 Rev 2.1 1993	Chloride	242	mg/L	24.0	04/05/20 07:14	
EPA 300.0 Rev 2.1 1993	Fluoride	0.15J	mg/L	0.30	04/04/20 16:30	
EPA 300.0 Rev 2.1 1993	Sulfate	1210	mg/L	24.0	04/05/20 07:14	
2630472017	MW-23D					
	Field pH	6.80	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	342	mg/L	10.0	04/07/20 16:28	
EPA 6020B	Arsenic	0.00082J	mg/L	0.0050	04/08/20 19:31	B
EPA 6020B	Barium	0.065	mg/L	0.010	04/08/20 19:31	
EPA 6020B	Boron	3.5	mg/L	0.50	04/09/20 11:19	
EPA 6020B	Chromium	0.00086J	mg/L	0.010	04/08/20 19:31	
EPA 6020B	Cobalt	0.0011J	mg/L	0.0050	04/08/20 19:31	
EPA 6020B	Lithium	0.0024J	mg/L	0.030	04/08/20 19:31	
EPA 6020B	Molybdenum	0.0032J	mg/L	0.010	04/08/20 19:31	
SM 2540C	Total Dissolved Solids	1530	mg/L	10.0	04/07/20 12:20	
EPA 300.0 Rev 2.1 1993	Chloride	166	mg/L	10.0	04/05/20 07:27	
EPA 300.0 Rev 2.1 1993	Sulfate	478	mg/L	10.0	04/05/20 07:27	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-1		Lab ID: 2630472001		Collected: 03/25/20 15:56		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.95	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	127	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 13:58	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	03/31/20 21:03	04/02/20 20:39	7440-38-2	
Barium	0.043	mg/L	0.010	0.00049	1	03/31/20 21:03	04/02/20 20:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/31/20 21:03	04/02/20 20:39	7440-41-7	
Boron	0.025J	mg/L	0.10	0.0049	1	03/31/20 21:03	04/02/20 20:39	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/31/20 21:03	04/02/20 20:39	7440-43-9	
Chromium	0.00072J	mg/L	0.010	0.00039	1	03/31/20 21:03	04/02/20 20:39	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/31/20 21:03	04/02/20 20:39	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:03	04/02/20 20:39	7439-92-1	
Lithium	0.00083J	mg/L	0.030	0.00078	1	03/31/20 21:03	04/02/20 20:39	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:03	04/02/20 20:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/31/20 21:03	04/02/20 20:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/31/20 21:03	04/02/20 20:39	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	496	mg/L	10.0	10.0	1		04/01/20 15:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	20.4	mg/L	1.0	0.60	1		04/03/20 00:17	16887-00-6	M1
Fluoride	0.098J	mg/L	0.30	0.050	1		04/03/20 00:17	16984-48-8	
Sulfate	85.9	mg/L	1.0	0.50	1		04/03/20 00:17	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-3		Lab ID: 2630472002		Collected: 03/25/20 15:17		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.4	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	89.8	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:01	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	03/31/20 21:03	04/02/20 20:56	7440-38-2	
Barium	0.13	mg/L	0.010	0.00049	1	03/31/20 21:03	04/02/20 20:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/31/20 21:03	04/02/20 20:56	7440-41-7	
Boron	0.0096J	mg/L	0.10	0.0049	1	03/31/20 21:03	04/02/20 20:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/31/20 21:03	04/02/20 20:56	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/31/20 21:03	04/02/20 20:56	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/31/20 21:03	04/02/20 20:56	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:03	04/02/20 20:56	7439-92-1	
Lithium	0.0035J	mg/L	0.030	0.00078	1	03/31/20 21:03	04/02/20 20:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:03	04/02/20 20:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/31/20 21:03	04/02/20 20:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/31/20 21:03	04/02/20 20:56	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	284	mg/L	10.0	10.0	1		04/01/20 15:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6.1	mg/L	1.0	0.60	1		04/03/20 01:01	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 01:01	16984-48-8	
Sulfate	50.5	mg/L	1.0	0.50	1		04/03/20 01:01	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-2		Lab ID: 2630472003		Collected: 03/25/20 16:32		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	5.36	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	23.0	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:05	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	03/31/20 21:03	04/02/20 21:02	7440-38-2	
Barium	0.12	mg/L	0.010	0.00049	1	03/31/20 21:03	04/02/20 21:02	7440-39-3	
Beryllium	0.00016J	mg/L	0.0030	0.000074	1	03/31/20 21:03	04/02/20 21:02	7440-41-7	
Boron	0.039J	mg/L	0.10	0.0049	1	03/31/20 21:03	04/02/20 21:02	7440-42-8	
Cadmium	0.00014J	mg/L	0.0025	0.00011	1	03/31/20 21:03	04/02/20 21:02	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/31/20 21:03	04/02/20 21:02	7440-47-3	
Cobalt	0.020	mg/L	0.0050	0.00030	1	03/31/20 21:03	04/02/20 21:02	7440-48-4	
Lead	0.00011J	mg/L	0.0050	0.000046	1	03/31/20 21:03	04/02/20 21:02	7439-92-1	
Lithium	0.0017J	mg/L	0.030	0.00078	1	03/31/20 21:03	04/02/20 21:02	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:03	04/02/20 21:02	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/31/20 21:03	04/02/20 21:02	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/31/20 21:03	04/02/20 21:02	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	138	mg/L	10.0	10.0	1		04/01/20 15:06		
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		04/03/20 01:46	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 01:46	16984-48-8	
Sulfate	46.3	mg/L	1.0	0.50	1		04/03/20 01:46	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Sample: HGWA-6		Lab ID: 2630472004		Collected: 03/25/20 17:15		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.39	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Atlanta, GA									
Calcium	58.1	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:08	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	03/31/20 21:07	04/03/20 13:16	7440-38-2	
Barium	0.19	mg/L	0.010	0.00049	1	03/31/20 21:07	04/03/20 13:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/31/20 21:07	04/03/20 13:16	7440-41-7	
Boron	0.021J	mg/L	0.10	0.0049	1	03/31/20 21:07	04/03/20 13:16	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/31/20 21:07	04/03/20 13:16	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/31/20 21:07	04/03/20 13:16	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/31/20 21:07	04/03/20 13:16	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:07	04/03/20 13:16	7439-92-1	
Lithium	0.011J	mg/L	0.030	0.00078	1	03/31/20 21:07	04/03/20 13:16	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:07	04/03/20 13:16	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/31/20 21:07	04/03/20 13:16	7782-49-2	
Thallium	0.000057J	mg/L	0.0010	0.000052	1	03/31/20 21:07	04/03/20 13:16	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	240	mg/L	10.0	10.0	1		04/01/20 15:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	1.2	mg/L	1.0	0.60	1		04/03/20 02:01	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 02:01	16984-48-8	
Sulfate	35.1	mg/L	1.0	0.50	1		04/03/20 02:01	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-5		Lab ID: 2630472005		Collected: 03/26/20 09:20		Received: 03/27/20 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.38	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	27.8	mg/L	1.0	0.14	1	04/01/20 15:36	04/02/20 17:25	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 15:40	04/02/20 22:12	7440-38-2	
Barium	0.045	mg/L	0.010	0.00049	1	04/01/20 15:40	04/02/20 22:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 15:40	04/02/20 22:12	7440-41-7	
Boron	0.0072J	mg/L	0.10	0.0049	1	04/01/20 15:40	04/02/20 22:12	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 15:40	04/02/20 22:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/01/20 15:40	04/02/20 22:12	7440-47-3	
Cobalt	0.0013J	mg/L	0.0050	0.00030	1	04/01/20 15:40	04/02/20 22:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/01/20 15:40	04/02/20 22:12	7439-92-1	
Lithium	0.0029J	mg/L	0.030	0.00078	1	04/01/20 15:40	04/02/20 22:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 15:40	04/02/20 22:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 15:40	04/02/20 22:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 15:40	04/02/20 22:12	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	104	mg/L	10.0	10.0	1		04/02/20 15:00		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1.4	mg/L	1.0	0.60	1		04/02/20 21:49	16887-00-6	
Fluoride	0.066J	mg/L	0.30	0.050	1		04/02/20 21:49	16984-48-8	
Sulfate	21.6	mg/L	1.0	0.50	1		04/02/20 21:49	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-4		Lab ID: 2630472006		Collected: 03/26/20 12:55		Received: 03/27/20 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	5.77	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	14.9	mg/L	1.0	0.14	1	04/01/20 15:36	04/03/20 14:51	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 15:40	04/02/20 22:18	7440-38-2	
Barium	0.026	mg/L	0.010	0.00049	1	04/01/20 15:40	04/02/20 22:18	7440-39-3	
Beryllium	0.000076J	mg/L	0.0030	0.000074	1	04/01/20 15:40	04/02/20 22:18	7440-41-7	
Boron	0.012J	mg/L	0.10	0.0049	1	04/01/20 15:40	04/02/20 22:18	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 15:40	04/02/20 22:18	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/01/20 15:40	04/02/20 22:18	7440-47-3	
Cobalt	0.00058J	mg/L	0.0050	0.00030	1	04/01/20 15:40	04/02/20 22:18	7440-48-4	
Lead	0.000059J	mg/L	0.0050	0.000046	1	04/01/20 15:40	04/02/20 22:18	7439-92-1	
Lithium	0.00095J	mg/L	0.030	0.00078	1	04/01/20 15:40	04/02/20 22:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 15:40	04/02/20 22:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 15:40	04/02/20 22:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 15:40	04/02/20 22:18	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	69.0	mg/L	10.0	10.0	1		04/02/20 15:00		D6
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		04/02/20 22:04	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/02/20 22:04	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		04/02/20 22:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWC-15		Lab ID: 2630472007		Collected: 03/26/20 14:45		Received: 03/27/20 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.03	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	240	mg/L	1.0	0.14	1	04/01/20 15:36	04/02/20 17:56	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 15:40	04/02/20 22:24	7440-38-2	
Barium	0.016	mg/L	0.010	0.00049	1	04/01/20 15:40	04/02/20 22:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 15:40	04/02/20 22:24	7440-41-7	
Boron	2.1	mg/L	0.10	0.0049	1	04/01/20 15:40	04/02/20 22:24	7440-42-8	
Cadmium	0.0016J	mg/L	0.0025	0.00011	1	04/01/20 15:40	04/02/20 22:24	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/01/20 15:40	04/02/20 22:24	7440-47-3	
Cobalt	0.022	mg/L	0.0050	0.00030	1	04/01/20 15:40	04/02/20 22:24	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/01/20 15:40	04/02/20 22:24	7439-92-1	
Lithium	0.0061J	mg/L	0.030	0.00078	1	04/01/20 15:40	04/02/20 22:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 15:40	04/02/20 22:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 15:40	04/02/20 22:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 15:40	04/02/20 22:24	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1000	mg/L	10.0	10.0	1		04/02/20 15:00		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	142	mg/L	9.0	5.4	9		04/03/20 09:30	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/02/20 22:49	16984-48-8	
Sulfate	438	mg/L	9.0	4.5	9		04/03/20 09:30	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: MW-22		Lab ID: 2630472008		Collected: 03/27/20 16:10		Received: 03/30/20 10:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	5.71	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	212	mg/L	1.0	0.14	1	04/01/20 19:37	04/03/20 22:36	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 18:37	04/03/20 16:59	7440-38-2	
Barium	0.025	mg/L	0.010	0.00049	1	04/01/20 18:37	04/03/20 16:59	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 18:37	04/03/20 16:59	7440-41-7	
Boron	2.4	mg/L	0.10	0.0049	1	04/01/20 18:37	04/03/20 16:59	7440-42-8	
Cadmium	0.0019J	mg/L	0.0025	0.00011	1	04/01/20 18:37	04/03/20 16:59	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/01/20 18:37	04/03/20 16:59	7440-47-3	
Cobalt	0.025	mg/L	0.0050	0.00030	1	04/01/20 18:37	04/03/20 16:59	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/01/20 18:37	04/03/20 16:59	7439-92-1	
Lithium	0.0013J	mg/L	0.030	0.00078	1	04/01/20 18:37	04/03/20 16:59	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:37	04/03/20 16:59	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 18:37	04/03/20 16:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 18:37	04/03/20 16:59	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1100	mg/L	10.0	10.0	1		04/02/20 17:56		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	141	mg/L	8.0	4.8	8		04/03/20 13:31	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 06:05	16984-48-8	
Sulfate	419	mg/L	8.0	4.0	8		04/03/20 13:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Sample: HGWC-14		Lab ID: 2630472009		Collected: 03/30/20 09:55		Received: 03/31/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	4.57	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Atlanta, GA									
Calcium	600	mg/L	10.0	1.4	10	04/01/20 18:00	04/06/20 13:38	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Atlanta, GA									
Arsenic	0.0051	mg/L	0.0050	0.00035	1	04/01/20 18:00	04/02/20 16:04	7440-38-2	B
Barium	0.020	mg/L	0.010	0.00049	1	04/01/20 18:00	04/02/20 16:04	7440-39-3	
Beryllium	0.00043J	mg/L	0.0030	0.000074	1	04/01/20 18:00	04/02/20 16:04	7440-41-7	
Boron	11.7	mg/L	1.0	0.049	10	04/01/20 18:00	04/03/20 10:30	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 18:00	04/02/20 16:04	7440-43-9	
Chromium	0.00066J	mg/L	0.010	0.00039	1	04/01/20 18:00	04/02/20 16:04	7440-47-3	
Cobalt	0.028	mg/L	0.0050	0.00030	1	04/01/20 18:00	04/02/20 16:04	7440-48-4	
Lead	0.0015J	mg/L	0.0050	0.000046	1	04/01/20 18:00	04/02/20 16:04	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	04/01/20 18:00	04/02/20 16:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:00	04/02/20 16:04	7439-98-7	
Selenium	0.0049J	mg/L	0.010	0.0013	1	04/01/20 18:00	04/02/20 16:04	7782-49-2	
Thallium	0.00028J	mg/L	0.0010	0.000052	1	04/01/20 18:00	04/02/20 16:04	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	2590	mg/L	10.0	10.0	1		04/06/20 18:46		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	236	mg/L	22.0	13.2	22		04/05/20 07:37	16887-00-6	
Fluoride	0.092J	mg/L	0.30	0.050	1		04/04/20 17:18	16984-48-8	
Sulfate	1150	mg/L	22.0	11.0	22		04/05/20 07:37	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Sample: FD-02		Lab ID: 2630472010		Collected: 03/30/20 00:00		Received: 03/31/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA							
Calcium	607	mg/L	10.0	1.4	10	04/01/20 18:00	04/06/20 13:41	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA							
Arsenic	0.0048J	mg/L	0.0050	0.00035	1	04/01/20 18:00	04/02/20 16:10	7440-38-2	B
Barium	0.019	mg/L	0.010	0.00049	1	04/01/20 18:00	04/02/20 16:10	7440-39-3	
Beryllium	0.00040J	mg/L	0.0030	0.000074	1	04/01/20 18:00	04/02/20 16:10	7440-41-7	
Boron	11.5	mg/L	1.0	0.049	10	04/01/20 18:00	04/03/20 10:36	7440-42-8	
Cadmium	0.00012J	mg/L	0.0025	0.00011	1	04/01/20 18:00	04/02/20 16:10	7440-43-9	
Chromium	0.00041J	mg/L	0.010	0.00039	1	04/01/20 18:00	04/02/20 16:10	7440-47-3	
Cobalt	0.027	mg/L	0.0050	0.00030	1	04/01/20 18:00	04/02/20 16:10	7440-48-4	
Lead	0.0014J	mg/L	0.0050	0.000046	1	04/01/20 18:00	04/02/20 16:10	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	04/01/20 18:00	04/02/20 16:10	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:00	04/02/20 16:10	7439-98-7	
Selenium	0.0054J	mg/L	0.010	0.0013	1	04/01/20 18:00	04/02/20 16:10	7782-49-2	
Thallium	0.00027J	mg/L	0.0010	0.000052	1	04/01/20 18:00	04/02/20 16:10	7440-28-0	
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA							
Total Dissolved Solids	2480	mg/L	10.0	10.0	1		04/06/20 18:46		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	233	mg/L	22.0	13.2	22		04/05/20 07:51	16887-00-6	
Fluoride	0.13J	mg/L	0.30	0.050	1		04/04/20 17:33	16984-48-8	
Sulfate	1130	mg/L	22.0	11.0	22		04/05/20 07:51	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Sample: HGWC-16		Lab ID: 2630472011		Collected: 03/30/20 11:25		Received: 03/31/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.09	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	208	mg/L	1.0	0.14	1	04/01/20 18:00	04/03/20 20:33	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.0011J	mg/L	0.0050	0.00035	1	04/01/20 18:00	04/02/20 16:15	7440-38-2	B
Barium	0.11	mg/L	0.010	0.00049	1	04/01/20 18:00	04/02/20 16:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 18:00	04/02/20 16:15	7440-41-7	
Boron	2.4	mg/L	0.10	0.0049	1	04/01/20 18:00	04/02/20 16:15	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 18:00	04/02/20 16:15	7440-43-9	
Chromium	0.00040J	mg/L	0.010	0.00039	1	04/01/20 18:00	04/02/20 16:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	04/01/20 18:00	04/02/20 16:15	7440-48-4	
Lead	0.000073J	mg/L	0.0050	0.000046	1	04/01/20 18:00	04/02/20 16:15	7439-92-1	
Lithium	0.0041J	mg/L	0.030	0.00078	1	04/01/20 18:00	04/02/20 16:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:00	04/02/20 16:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 18:00	04/02/20 16:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 18:00	04/02/20 16:15	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	787	mg/L	10.0	10.0	1		04/06/20 18:46		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	80.2	mg/L	1.0	0.60	1		04/04/20 17:47	16887-00-6	
Fluoride	0.059J	mg/L	0.30	0.050	1		04/04/20 17:47	16984-48-8	
Sulfate	223	mg/L	5.0	2.5	5		04/05/20 08:06	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: FB-02		Lab ID: 2630472012		Collected: 03/30/20 17:35		Received: 03/31/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	ND	mg/L	1.0	0.14	1	04/01/20 18:00	04/03/20 20:36	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 18:00	04/02/20 16:21	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	04/01/20 18:00	04/02/20 16:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 18:00	04/02/20 16:21	7440-41-7	
Boron	0.032J	mg/L	0.10	0.0049	1	04/01/20 18:00	04/02/20 16:21	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 18:00	04/02/20 16:21	7440-43-9	
Chromium	0.00059J	mg/L	0.010	0.00039	1	04/01/20 18:00	04/02/20 16:21	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	04/01/20 18:00	04/02/20 16:21	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/01/20 18:00	04/02/20 16:21	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	04/01/20 18:00	04/02/20 16:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:00	04/02/20 16:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 18:00	04/02/20 16:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 18:00	04/02/20 16:21	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		04/06/20 18:47		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	ND	mg/L	1.0	0.60	1		04/04/20 18:02	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/04/20 18:02	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		04/04/20 18:02	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWC-17		Lab ID: 2630472013		Collected: 03/31/20 09:00		Received: 04/01/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.28	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	328	mg/L	10.0	1.4	10	04/02/20 14:30	04/03/20 17:12	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.00080J	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 18:17	7440-38-2	B
Barium	0.029	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 18:17	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 18:17	7440-41-7	
Boron	6.9	mg/L	0.50	0.025	5	04/02/20 19:04	04/09/20 10:45	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 18:17	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 18:17	7440-47-3	
Cobalt	0.016	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 18:17	7440-48-4	
Lead	0.000077J	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 18:17	7439-92-1	
Lithium	0.00090J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 18:17	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 18:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 18:17	7782-49-2	
Thallium	0.00014J	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 18:17	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1310	mg/L	10.0	10.0	1		04/07/20 12:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	161	mg/L	10.0	6.0	10		04/05/20 09:34	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/04/20 18:50	16984-48-8	M1
Sulfate	484	mg/L	10.0	5.0	10		04/05/20 09:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Sample: HGWC-18 **Lab ID: 2630472014** Collected: 03/31/20 13:30 Received: 04/01/20 10:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	4.43	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	418	mg/L	10.0	1.4	10	04/02/20 14:30	04/03/20 17:15	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.0056	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 18:22	7440-38-2	B
Barium	0.029	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 18:22	7440-39-3	
Beryllium	0.0030	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 18:22	7440-41-7	
Boron	9.4	mg/L	0.50	0.025	5	04/02/20 19:04	04/09/20 10:51	7440-42-8	
Cadmium	0.0017J	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 18:22	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 18:22	7440-47-3	
Cobalt	0.16	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 18:22	7440-48-4	
Lead	0.0014J	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 18:22	7439-92-1	
Lithium	0.012J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 18:22	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 18:22	7439-98-7	
Selenium	0.019	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 18:22	7782-49-2	
Thallium	0.00015J	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 18:22	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1860	mg/L	10.0	10.0	1		04/07/20 12:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	126	mg/L	19.0	11.4	19		04/05/20 10:15	16887-00-6	
Fluoride	0.45	mg/L	0.30	0.050	1		04/04/20 19:32	16984-48-8	
Sulfate	934	mg/L	19.0	9.5	19		04/05/20 10:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: MW-21D		Lab ID: 2630472015		Collected: 04/01/20 12:04		Received: 04/02/20 10:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.90	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	438	mg/L	10.0	1.4	10	04/03/20 15:15	04/07/20 16:20	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.0013J	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 19:08	7440-38-2	B
Barium	0.066	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 19:08	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 19:08	7440-41-7	
Boron	6.3	mg/L	0.50	0.025	5	04/02/20 19:04	04/09/20 11:08	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 19:08	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 19:08	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 19:08	7440-48-4	
Lead	0.000048J	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 19:08	7439-92-1	
Lithium	0.026J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 19:08	7439-93-2	
Molybdenum	0.024	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 19:08	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 19:08	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 19:08	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1940	mg/L	10.0	10.0	1		04/07/20 12:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	236	mg/L	18.0	10.8	18		04/05/20 07:00	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/04/20 16:16	16984-48-8	
Sulfate	889	mg/L	18.0	9.0	18		04/05/20 07:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: MW-33		Lab ID: 2630472016		Collected: 04/01/20 10:02		Received: 04/02/20 10:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	4.35	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	567	mg/L	10.0	1.4	10	04/03/20 15:15	04/07/20 16:24	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.0061	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 19:25	7440-38-2	B
Barium	0.027	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 19:25	7440-39-3	
Beryllium	0.0011J	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 19:25	7440-41-7	
Boron	11.6	mg/L	1.0	0.049	10	04/02/20 19:04	04/09/20 11:14	7440-42-8	
Cadmium	0.00022J	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 19:25	7440-43-9	
Chromium	0.00069J	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 19:25	7440-47-3	
Cobalt	0.058	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 19:25	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 19:25	7439-92-1	
Lithium	0.0011J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 19:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 19:25	7439-98-7	
Selenium	0.011	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 19:25	7782-49-2	
Thallium	0.00029J	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 19:25	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	2590	mg/L	10.0	10.0	1		04/07/20 12:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	242	mg/L	24.0	14.4	24		04/05/20 07:14	16887-00-6	
Fluoride	0.15J	mg/L	0.30	0.050	1		04/04/20 16:30	16984-48-8	
Sulfate	1210	mg/L	24.0	12.0	24		04/05/20 07:14	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Sample: MW-23D		Lab ID: 2630472017		Collected: 04/01/20 11:37		Received: 04/02/20 10:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.80	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	342	mg/L	10.0	1.4	10	04/03/20 15:15	04/07/20 16:28	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.00082J	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 19:31	7440-38-2	B
Barium	0.065	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 19:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 19:31	7440-41-7	
Boron	3.5	mg/L	0.50	0.025	5	04/02/20 19:04	04/09/20 11:19	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 19:31	7440-43-9	
Chromium	0.00086J	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 19:31	7440-47-3	
Cobalt	0.0011J	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 19:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 19:31	7439-92-1	
Lithium	0.0024J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 19:31	7439-93-2	
Molybdenum	0.0032J	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 19:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 19:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 19:31	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1530	mg/L	10.0	10.0	1		04/07/20 12:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	166	mg/L	10.0	6.0	10		04/05/20 07:27	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/04/20 16:44	16984-48-8	
Sulfate	478	mg/L	10.0	5.0	10		04/05/20 07:27	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch: 45121	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

METHOD BLANK: 207982 Matrix: Water
Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/02/20 13:05	

LABORATORY CONTROL SAMPLE: 207983

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207984 207985

Parameter	Units	207984		207985		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	157	1	1	158	157	93	15	75-125	0	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch: 45172	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472005, 2630472006, 2630472007

METHOD BLANK: 208108 Matrix: Water

Associated Lab Samples: 2630472005, 2630472006, 2630472007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/02/20 16:01	

LABORATORY CONTROL SAMPLE: 208109

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: 208110 208111

Parameter	Units	208110		208111		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	107	1	1	110	108	372	91	75-125	3	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45185 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472008

METHOD BLANK: 208195 Matrix: Water
Associated Lab Samples: 2630472008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/03/20 20:54	

LABORATORY CONTROL SAMPLE: 208196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208197 208198

Parameter	Units	2630471005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	27.0	1	1	27.9	28.3	89	125	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch: 45190	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

METHOD BLANK: 208222 Matrix: Water
Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/03/20 19:19	

LABORATORY CONTROL SAMPLE: 208223

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208224 208225

Parameter	Units	2630623001		208224		208225		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result				
Calcium	mg/L	7420 ug/L	1	1	8.7	8.6	124	119	75-125	1	20

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45218	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472013, 2630472014

METHOD BLANK: 208341 Matrix: Water

Associated Lab Samples: 2630472013, 2630472014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/02/20 18:14	

LABORATORY CONTROL SAMPLE: 208342

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208343 208344

Parameter	Units	208343		208344		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	124	1	1	128	131	368	710	75-125	3	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45249 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472015, 2630472016, 2630472017

METHOD BLANK: 208586 Matrix: Water
Associated Lab Samples: 2630472015, 2630472016, 2630472017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/06/20 16:20	

LABORATORY CONTROL SAMPLE: 208587

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: 208588 208589

Parameter	Units	208588		208589		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	96.2	1	97.8	98.3	156	209	75-125	1	20	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45112 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472001, 2630472002, 2630472003

METHOD BLANK: 207955 Matrix: Water

Associated Lab Samples: 2630472001, 2630472002, 2630472003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	04/02/20 18:39	
Barium	mg/L	ND	0.010	0.00049	04/02/20 18:39	
Beryllium	mg/L	ND	0.0030	0.000074	04/02/20 18:39	
Boron	mg/L	ND	0.10	0.0049	04/02/20 18:39	
Cadmium	mg/L	ND	0.0025	0.00011	04/02/20 18:39	
Chromium	mg/L	ND	0.010	0.00039	04/02/20 18:39	
Cobalt	mg/L	ND	0.0050	0.00030	04/02/20 18:39	
Lead	mg/L	ND	0.0050	0.000046	04/02/20 18:39	
Lithium	mg/L	ND	0.030	0.00078	04/02/20 18:39	
Molybdenum	mg/L	ND	0.010	0.00095	04/02/20 18:39	
Selenium	mg/L	ND	0.010	0.0013	04/02/20 18:39	
Thallium	mg/L	ND	0.0010	0.000052	04/02/20 18:39	

LABORATORY CONTROL SAMPLE: 207956

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	100	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	1.1	105	80-120	
Cadmium	mg/L	0.1	0.10	102	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	0.098	98	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207957 207958

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2630435012	Result	Conc.	Conc.							Result
Arsenic	mg/L	0.00070J	0.1	0.1	0.10	0.10	99	101	75-125	1	20	
Barium	mg/L	0.033	0.1	0.1	0.14	0.13	102	99	75-125	2	20	
Beryllium	mg/L	0.00034J	0.1	0.1	0.096	0.099	95	99	75-125	4	20	
Boron	mg/L	2.4	1	1	3.4	3.4	97	102	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	207957		207958		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630435012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.11	0.10	107	102	75-125	4	20		
Cobalt	mg/L	0.0016J	0.1	0.1	0.10	0.10	102	101	75-125	1	20		
Lead	mg/L	0.000075J	0.1	0.1	0.10	0.10	100	101	75-125	1	20		
Lithium	mg/L	0.016J	0.1	0.1	0.12	0.12	101	103	75-125	2	20		
Molybdenum	mg/L	0.0015J	0.1	0.1	0.11	0.11	105	104	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	99	100	75-125	1	20		
Thallium	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	0	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45113 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472004

METHOD BLANK: 207961 Matrix: Water
Associated Lab Samples: 2630472004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	04/03/20 13:05	
Barium	mg/L	ND	0.010	0.00049	04/03/20 13:05	
Beryllium	mg/L	ND	0.0030	0.000074	04/03/20 13:05	
Boron	mg/L	ND	0.10	0.0049	04/03/20 13:05	
Cadmium	mg/L	ND	0.0025	0.00011	04/03/20 13:05	
Chromium	mg/L	ND	0.010	0.00039	04/03/20 13:05	
Cobalt	mg/L	ND	0.0050	0.00030	04/03/20 13:05	
Lead	mg/L	ND	0.0050	0.000046	04/03/20 13:05	
Lithium	mg/L	ND	0.030	0.00078	04/03/20 13:05	
Molybdenum	mg/L	ND	0.010	0.00095	04/03/20 13:05	
Selenium	mg/L	ND	0.010	0.0013	04/03/20 13:05	
Thallium	mg/L	ND	0.0010	0.000052	04/03/20 13:05	

LABORATORY CONTROL SAMPLE: 207962

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207963 207964

Parameter	Units	2630472004		207964		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic	mg/L	ND	0.1	0.10	0.099	100	99	75-125	2	20	
Barium	mg/L	0.19	0.1	0.28	0.29	92	97	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.097	0.094	97	94	75-125	4	20	
Boron	mg/L	0.021J	1	1.0	0.99	102	97	75-125	5	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	207963		207964		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2630472004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Cadmium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20	
Lithium	mg/L	0.011J	0.1	0.1	0.11	0.10	97	94	75-125	4	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Thallium	mg/L	0.000057J	0.1	0.1	0.099	0.098	99	98	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45171 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472005, 2630472006, 2630472007

METHOD BLANK: 208104 Matrix: Water
Associated Lab Samples: 2630472005, 2630472006, 2630472007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	04/02/20 20:29	
Barium	mg/L	ND	0.010	0.00049	04/02/20 20:29	
Beryllium	mg/L	ND	0.0030	0.000074	04/02/20 20:29	
Boron	mg/L	ND	0.10	0.0049	04/02/20 20:29	
Cadmium	mg/L	ND	0.0025	0.00011	04/02/20 20:29	
Chromium	mg/L	ND	0.010	0.00039	04/02/20 20:29	
Cobalt	mg/L	ND	0.0050	0.00030	04/02/20 20:29	
Lead	mg/L	ND	0.0050	0.000046	04/02/20 20:29	
Lithium	mg/L	ND	0.030	0.00078	04/02/20 20:29	
Molybdenum	mg/L	ND	0.010	0.00095	04/02/20 20:29	
Selenium	mg/L	ND	0.010	0.0013	04/02/20 20:29	
Thallium	mg/L	ND	0.0010	0.000052	04/02/20 20:29	

LABORATORY CONTROL SAMPLE: 208105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.096	96	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	101	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.096	96	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.093	93	80-120	
Thallium	mg/L	0.1	0.094	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208106 208107

Parameter	Units	208106		208107		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2630449011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20	
Barium	mg/L	0.0072J	0.1	0.1	0.11	0.11	101	101	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20	
Boron	mg/L	0.24	1	1	1.2	1.2	94	97	75-125	3	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	208106		208107		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2630449011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	1	20	
Chromium	mg/L	0.0016J	0.1	0.1	0.10	0.10	101	102	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.10	99	101	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.094	0.094	94	93	75-125	0	20	
Lithium	mg/L	0.0031J	0.1	0.1	0.10	0.10	98	97	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.098	0.099	98	99	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.096	0.097	95	96	75-125	2	20	
Thallium	mg/L	0.000085J	0.1	0.1	0.094	0.095	94	95	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45184 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472008

METHOD BLANK: 208191 Matrix: Water
Associated Lab Samples: 2630472008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	04/03/20 15:05	
Barium	mg/L	ND	0.010	0.00049	04/03/20 15:05	
Beryllium	mg/L	ND	0.0030	0.000074	04/03/20 15:05	
Boron	mg/L	ND	0.10	0.0049	04/03/20 15:05	
Cadmium	mg/L	ND	0.0025	0.00011	04/03/20 15:05	
Chromium	mg/L	ND	0.010	0.00039	04/03/20 15:05	
Cobalt	mg/L	ND	0.0050	0.00030	04/03/20 15:05	
Lead	mg/L	ND	0.0050	0.000046	04/03/20 15:05	
Lithium	mg/L	ND	0.030	0.00078	04/03/20 15:05	
Molybdenum	mg/L	ND	0.010	0.00095	04/03/20 15:05	
Selenium	mg/L	ND	0.010	0.0013	04/03/20 15:05	
Thallium	mg/L	ND	0.0010	0.000052	04/03/20 15:05	

LABORATORY CONTROL SAMPLE: 208192

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.097	97	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208193 208194

Parameter	Units	2630325039		208194		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	0.00051J	0.1	0.1	0.10	0.10	99	100	75-125	1	20	
Barium	mg/L	0.046	0.1	0.1	0.15	0.14	100	98	75-125	1	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20	
Boron	mg/L	1.9	1	1	2.9	2.9	91	92	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	208193		208194		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2630325039 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Chromium	mg/L	0.00058J	0.1	0.1	0.10	0.10	101	103	75-125	2	20		
Cobalt	mg/L	0.00056J	0.1	0.1	0.10	0.10	100	101	75-125	1	20		
Lead	mg/L	0.00017J	0.1	0.1	0.092	0.092	91	92	75-125	0	20		
Lithium	mg/L	0.00079J	0.1	0.1	0.099	0.10	98	100	75-125	2	20		
Molybdenum	mg/L	0.0012J	0.1	0.1	0.10	0.10	102	102	75-125	0	20		
Selenium	mg/L	0.0039J	0.1	0.1	0.10	0.11	100	104	75-125	4	20		
Thallium	mg/L	0.00014J	0.1	0.1	0.093	0.095	93	95	75-125	2	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45189 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

METHOD BLANK: 208216 Matrix: Water
Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.00071J	0.0050	0.00035	04/02/20 14:43	
Barium	mg/L	ND	0.010	0.00049	04/02/20 14:43	
Beryllium	mg/L	ND	0.0030	0.000074	04/02/20 14:43	
Boron	mg/L	ND	0.10	0.0049	04/02/20 14:43	
Cadmium	mg/L	ND	0.0025	0.00011	04/02/20 14:43	
Chromium	mg/L	ND	0.010	0.00039	04/02/20 14:43	
Cobalt	mg/L	ND	0.0050	0.00030	04/02/20 14:43	
Lead	mg/L	ND	0.0050	0.000046	04/02/20 14:43	
Lithium	mg/L	ND	0.030	0.00078	04/02/20 14:43	
Molybdenum	mg/L	ND	0.010	0.00095	04/02/20 14:43	
Selenium	mg/L	ND	0.010	0.0013	04/02/20 14:43	
Thallium	mg/L	ND	0.0010	0.000052	04/02/20 14:43	

LABORATORY CONTROL SAMPLE: 208217

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	0.097	97	80-120	
Beryllium	mg/L	0.1	0.10	104	80-120	
Boron	mg/L	1	1.1	105	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208218 208219

Parameter	Units	208218		208219		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	ND	0.1	0.1	0.099	0.098	98	96	75-125	2	20	
Barium	mg/L	0.021	0.1	0.1	0.12	0.12	97	98	75-125	1	20	
Beryllium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	
Boron	mg/L	ND	1	1	1.0	1.0	100	98	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	208218		208219		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		263060001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Cadmium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.099	99	98	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.096	0.096	96	96	75-125	0	20	
Lithium	mg/L	ND	0.1	0.1	0.098	0.099	97	99	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	99	99	75-125	0	20	
Selenium	mg/L	ND	0.1	0.1	0.097	0.096	96	95	75-125	1	20	
Thallium	mg/L	ND	0.1	0.1	0.096	0.094	96	94	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45226 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

METHOD BLANK: 208424 Matrix: Water
Associated Lab Samples: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.00095J	0.0050	0.00035	04/08/20 16:57	
Barium	mg/L	ND	0.010	0.00049	04/08/20 16:57	
Beryllium	mg/L	ND	0.0030	0.000074	04/08/20 16:57	
Boron	mg/L	ND	0.10	0.0049	04/08/20 16:57	
Cadmium	mg/L	ND	0.0025	0.00011	04/08/20 16:57	
Chromium	mg/L	ND	0.010	0.00039	04/08/20 16:57	
Cobalt	mg/L	ND	0.0050	0.00030	04/08/20 16:57	
Lead	mg/L	ND	0.0050	0.000046	04/08/20 16:57	
Lithium	mg/L	ND	0.030	0.00078	04/08/20 16:57	
Molybdenum	mg/L	ND	0.010	0.00095	04/08/20 16:57	
Selenium	mg/L	ND	0.010	0.0013	04/08/20 16:57	
Thallium	mg/L	ND	0.0010	0.000052	04/08/20 16:57	

LABORATORY CONTROL SAMPLE: 208425

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	102	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.1	105	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	102	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.11	105	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208426 208427

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2630471018 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	0.0022J	0.1	0.1	0.10	0.10	101	101	75-125	0	20	
Barium	mg/L	0.026	0.1	0.1	0.13	0.13	107	108	75-125	0	20	
Beryllium	mg/L	0.00015J	0.1	0.1	0.097	0.098	97	97	75-125	0	20	
Boron	mg/L	0.17	1	1	1.2	1.2	102	106	75-125	3	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	208426		208427		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Cadmium	mg/L	ND	0.1	0.1	0.10	0.098	100	98	75-125	2	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	100	101	75-125	2	20		
Cobalt	mg/L	0.0014J	0.1	0.1	0.099	0.10	97	99	75-125	1	20		
Lead	mg/L	0.00030J	0.1	0.1	0.092	0.094	92	93	75-125	2	20		
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	100	105	75-125	5	20		
Molybdenum	mg/L	0.0074J	0.1	0.1	0.11	0.11	105	105	75-125	0	20		
Selenium	mg/L	0.019	0.1	0.1	0.12	0.12	102	99	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.093	0.094	93	94	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch:	45160	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

LABORATORY CONTROL SAMPLE: 208030

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	371	93	84-108	

SAMPLE DUPLICATE: 208031

Parameter	Units	2630449005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	278	272	2	10	

SAMPLE DUPLICATE: 208032

Parameter	Units	2630472002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	284	277	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch:	45207	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472005, 2630472006, 2630472007

LABORATORY CONTROL SAMPLE: 208287

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	341	85	84-108	

SAMPLE DUPLICATE: 208288

Parameter	Units	2630482003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	79.0	57.0	32	10	D6

SAMPLE DUPLICATE: 208289

Parameter	Units	2630472006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	69.0	80.0	15	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45209	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472008

LABORATORY CONTROL SAMPLE: 208290

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	375	94	84-108	

SAMPLE DUPLICATE: 208291

Parameter	Units	2630525003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	193	188	3	10	

SAMPLE DUPLICATE: 208292

Parameter	Units	2630471008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	413	422	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch:	45274	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

LABORATORY CONTROL SAMPLE: 208728

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	385	96	84-108	

SAMPLE DUPLICATE: 208729

Parameter	Units	2630576001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	6300	6560	4	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch:	45302	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

LABORATORY CONTROL SAMPLE: 208859

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	368	92	84-108	

SAMPLE DUPLICATE: 208860

Parameter	Units	2630471018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	565	535	5	10	

SAMPLE DUPLICATE: 208861

Parameter	Units	2630525018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	267	269	1	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 533972 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 2630472008

METHOD BLANK: 2849817 Matrix: Water
Associated Lab Samples: 2630472008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/02/20 23:19	
Fluoride	mg/L	ND	0.10	0.050	04/02/20 23:19	
Sulfate	mg/L	ND	1.0	0.50	04/02/20 23:19	

LABORATORY CONTROL SAMPLE: 2849818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	47.7	95	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	47.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849819 2849820

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630435024 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	5.4	50	50	56.3	57.7	102	105	90-110	2	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	106	108	90-110	2	10		
Sulfate	mg/L	ND	50	50	51.2	52.1	102	104	90-110	2	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849821 2849822

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630449009 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	1.6	50	50	54.0	53.9	105	105	90-110	0	10		
Fluoride	mg/L	0.13J	2.5	2.5	2.8	2.8	107	107	90-110	0	10		
Sulfate	mg/L	39.1	50	50	89.7	89.4	101	101	90-110	0	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 533983 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: 2630472005, 2630472006, 2630472007

METHOD BLANK: 2849870 Matrix: Water
Associated Lab Samples: 2630472005, 2630472006, 2630472007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/02/20 16:46	
Fluoride	mg/L	ND	0.10	0.050	04/02/20 16:46	
Sulfate	mg/L	ND	1.0	0.50	04/02/20 16:46	

LABORATORY CONTROL SAMPLE: 2849871

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	2.7	107	90-110	
Sulfate	mg/L	50	50.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849872 2849873

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630525010 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	1.2	50	50	56.1	56.3	110	110	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	103	105	90-110	2	10		
Sulfate	mg/L	10.8	50	50	65.8	66.0	110	110	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849874 2849875

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92471182001 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	3.2	50	50	57.8	59.5	109	113	90-110	3	10	M1	
Fluoride	mg/L	0.12	2.5	2.5	2.8	2.9	109	113	90-110	4	10	M1	
Sulfate	mg/L	ND	50	50	54.8	56.8	109	112	90-110	3	10	M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 533985 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: 2630472001, 2630472002, 2630472003, 2630472004

METHOD BLANK: 2849882 Matrix: Water
Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/02/20 23:48	
Fluoride	mg/L	ND	0.10	0.050	04/02/20 23:48	
Sulfate	mg/L	ND	1.0	0.50	04/02/20 23:48	

LABORATORY CONTROL SAMPLE: 2849883

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.8	100	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	50	49.7	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849884 2849885

Parameter	Units	2630472001		2849884		2849885		% 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	20.4	20.4	50	50	75.6	76.0	110	111	90-110	1	10	M1
Fluoride	mg/L	0.098J	0.098J	2.5	2.5	2.7	2.8	104	106	90-110	2	10	
Sulfate	mg/L	85.9	85.9	50	50	138	138	103	104	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849886 2849887

Parameter	Units	2630471007		2849886		2849887		% 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	0.73J	0.73J	50	50	58.0	58.4	114	115	90-110	1	10	M1
Fluoride	mg/L	0.082J	0.082J	2.5	2.5	2.8	2.8	109	109	90-110	0	10	
Sulfate	mg/L	176	176	50	50	227	231	102	109	90-110	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 534237 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: 2630472009, 2630472010, 2630472011, 2630472012

METHOD BLANK: 2851088 Matrix: Water
Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/04/20 14:53	
Fluoride	mg/L	ND	0.10	0.050	04/04/20 14:53	
Sulfate	mg/L	ND	1.0	0.50	04/04/20 14:53	

LABORATORY CONTROL SAMPLE: 2851089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.6	97	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	50	48.6	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851147 2851148

Parameter	Units	2851147		2851148		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Chloride	mg/L	1.5	50	50.2	50.4	97	98	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.6	2.7	104	105	90-110	0	10	
Sulfate	mg/L	46.2	50	93.5	93.5	95	95	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851149 2851150

Parameter	Units	2851149		2851150		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Chloride	mg/L	391	50	392	404	0	25	90-110	3	10 M6	
Fluoride	mg/L	0.27	2.5	2.6	2.6	93	94	90-110	1	10	
Sulfate	mg/L	119	50	161	166	83	93	90-110	3	10 M6	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 534425 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: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

METHOD BLANK: 2852105 Matrix: Water
Associated Lab Samples: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/04/20 14:52	
Fluoride	mg/L	ND	0.10	0.050	04/04/20 14:52	
Sulfate	mg/L	ND	1.0	0.50	04/04/20 14:52	

LABORATORY CONTROL SAMPLE: 2852106

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	2.4	96	90-110	
Sulfate	mg/L	50	51.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2852107 2852108

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630491001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	124	50	50	177	178	105	109	90-110	1	10		
Fluoride	mg/L	0.59	2.5	2.5	3.2	3.3	106	110	90-110	3	10		
Sulfate	mg/L	118	50	50	170	171	103	107	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2852109 2852110

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630472013 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	161	50	50	215	216	107	109	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.9	3.0	116	120	90-110	3	10 M1		
Sulfate	mg/L	484	50	50	534	536	100	103	90-110	0	10		

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QUALIFIERS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2630472001	HGWA-1				
2630472002	HGWA-3				
2630472003	HGWA-2				
2630472004	HGWA-6				
2630472005	HGWA-5				
2630472006	HGWA-4				
2630472007	HGWC-15				
2630472008	MW-22				
2630472009	HGWC-14				
2630472011	HGWC-16				
2630472013	HGWC-17				
2630472014	HGWC-18				
2630472015	MW-21D				
2630472016	MW-33				
2630472017	MW-23D				
2630472001	HGWA-1	EPA 3010A	45121	EPA 6010D	45135
2630472002	HGWA-3	EPA 3010A	45121	EPA 6010D	45135
2630472003	HGWA-2	EPA 3010A	45121	EPA 6010D	45135
2630472004	HGWA-6	EPA 3010A	45121	EPA 6010D	45135
2630472005	HGWA-5	EPA 3010A	45172	EPA 6010D	45193
2630472006	HGWA-4	EPA 3010A	45172	EPA 6010D	45193
2630472007	HGWC-15	EPA 3010A	45172	EPA 6010D	45193
2630472008	MW-22	EPA 3010A	45185	EPA 6010D	45196
2630472009	HGWC-14	EPA 3010A	45190	EPA 6010D	45194
2630472010	FD-02	EPA 3010A	45190	EPA 6010D	45194
2630472011	HGWC-16	EPA 3010A	45190	EPA 6010D	45194
2630472012	FB-02	EPA 3010A	45190	EPA 6010D	45194
2630472013	HGWC-17	EPA 3010A	45218	EPA 6010D	45223
2630472014	HGWC-18	EPA 3010A	45218	EPA 6010D	45223
2630472015	MW-21D	EPA 3010A	45249	EPA 6010D	45263
2630472016	MW-33	EPA 3010A	45249	EPA 6010D	45263
2630472017	MW-23D	EPA 3010A	45249	EPA 6010D	45263
2630472001	HGWA-1	EPA 3005A	45112	EPA 6020B	45137
2630472002	HGWA-3	EPA 3005A	45112	EPA 6020B	45137
2630472003	HGWA-2	EPA 3005A	45112	EPA 6020B	45137
2630472004	HGWA-6	EPA 3005A	45113	EPA 6020B	45136
2630472005	HGWA-5	EPA 3005A	45171	EPA 6020B	45192
2630472006	HGWA-4	EPA 3005A	45171	EPA 6020B	45192
2630472007	HGWC-15	EPA 3005A	45171	EPA 6020B	45192
2630472008	MW-22	EPA 3005A	45184	EPA 6020B	45197
2630472009	HGWC-14	EPA 3005A	45189	EPA 6020B	45195
2630472010	FD-02	EPA 3005A	45189	EPA 6020B	45195
2630472011	HGWC-16	EPA 3005A	45189	EPA 6020B	45195

REPORT OF LABORATORY ANALYSIS

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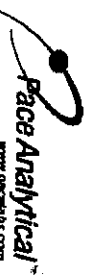
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2630472012	FB-02	EPA 3005A	45189	EPA 6020B	45195
2630472013	HGWC-17	EPA 3005A	45226	EPA 6020B	45233
2630472014	HGWC-18	EPA 3005A	45226	EPA 6020B	45233
2630472015	MW-21D	EPA 3005A	45226	EPA 6020B	45233
2630472016	MW-33	EPA 3005A	45226	EPA 6020B	45233
2630472017	MW-23D	EPA 3005A	45226	EPA 6020B	45233
2630472001	HGWA-1	SM 2540C	45160		
2630472002	HGWA-3	SM 2540C	45160		
2630472003	HGWA-2	SM 2540C	45160		
2630472004	HGWA-6	SM 2540C	45160		
2630472005	HGWA-5	SM 2540C	45207		
2630472006	HGWA-4	SM 2540C	45207		
2630472007	HGWC-15	SM 2540C	45207		
2630472008	MW-22	SM 2540C	45209		
2630472009	HGWC-14	SM 2540C	45274		
2630472010	FD-02	SM 2540C	45274		
2630472011	HGWC-16	SM 2540C	45274		
2630472012	FB-02	SM 2540C	45274		
2630472013	HGWC-17	SM 2540C	45302		
2630472014	HGWC-18	SM 2540C	45302		
2630472015	MW-21D	SM 2540C	45302		
2630472016	MW-33	SM 2540C	45302		
2630472017	MW-23D	SM 2540C	45302		
2630472001	HGWA-1	EPA 300.0 Rev 2.1 1993	533985		
2630472002	HGWA-3	EPA 300.0 Rev 2.1 1993	533985		
2630472003	HGWA-2	EPA 300.0 Rev 2.1 1993	533985		
2630472004	HGWA-6	EPA 300.0 Rev 2.1 1993	533985		
2630472005	HGWA-5	EPA 300.0 Rev 2.1 1993	533983		
2630472006	HGWA-4	EPA 300.0 Rev 2.1 1993	533983		
2630472007	HGWC-15	EPA 300.0 Rev 2.1 1993	533983		
2630472008	MW-22	EPA 300.0 Rev 2.1 1993	533972		
2630472009	HGWC-14	EPA 300.0 Rev 2.1 1993	534237		
2630472010	FD-02	EPA 300.0 Rev 2.1 1993	534237		
2630472011	HGWC-16	EPA 300.0 Rev 2.1 1993	534237		
2630472012	FB-02	EPA 300.0 Rev 2.1 1993	534237		
2630472013	HGWC-17	EPA 300.0 Rev 2.1 1993	534425		
2630472014	HGWC-18	EPA 300.0 Rev 2.1 1993	534425		
2630472015	MW-21D	EPA 300.0 Rev 2.1 1993	534425		
2630472016	MW-33	EPA 300.0 Rev 2.1 1993	534425		
2630472017	MW-23D	EPA 300.0 Rev 2.1 1993	534425		

REPORT OF LABORATORY ANALYSIS

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

Section A Required Client Information	Section B Required Project Information	Section C Invoice Information
Company: GA Power Address: Atlanta, GA	Report To: SCS Contacts Copy To: Geosynlec Contacts	Attention: Southern Co. Company Name: Southern Co.
Email To: SCS Contacts Phone: _____ Requested Due Date/TAT: To Day	Purchase Order No.: _____ Project Name: Plant Hammond AP-2 Semianual Compliance Project Number: GW65875	Address: _____ Reference Project Manager: Kevin Herring Pass Profile #: 2912-5
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		
Site Location: _____ STATE: <input type="checkbox"/> GA		

ITEM #	Valid Matrix Codes MATRIX CODE Sample IDs MUST BE UNIQUE	COLLECTED		DATE		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH =						
		DATE	TIME	DATE	TIME	Unpreserved	H ₂ SO ₄							HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other
		WT	G	WT	G	WT	G							WT	G	WT	G	WT	G
1	APWA-2	3/25	10:56	52.0	11:00	2	2	3					26.30472						
2		3/25	11:56	52.0	11:00	2	2	3					6.95						
3						2	2	3											
4						2	2	3											
5						2	2	3											
6						2	2	3											
7						2	2	3											
8						2	2	3											
9						2	2	3											
10						2	2	3											
11						2	2	3											
12						2	2	3											

Section D Required Client Information	Section E Requester Information
MATRIX CODE: (see valid codes to left)	DATE: 3-25-20
SAMPLE TYPE: (G=GRAB C=COMP)	TIME: 2002
UNPRESERVED	DATE: 3/25/20
H ₂ SO ₄	TIME: 11:00
HNO ₃	DATE: 3/25/20
HCl	TIME: 1450
NaOH	DATE: 3/25/20
Na ₂ S ₂ O ₃	TIME: 11:00
Methanol	DATE: 3/25/20
Other	TIME: 1450
Analysis Test	DATE: 3/25/20
Chloride, Fluoride, Sulfate	TIME: 11:00
TDS	DATE: 3/25/20
Metal's 6010/6020	TIME: 1450
RAD 226/228	DATE: 3/25/20
Temp in °C	DATE: 3/25/20
Received on Ice (Y/N)	TIME: 1450
Custody Sealed Cooler (Y/N)	DATE: 3/25/20
Samples Intact (Y/N)	TIME: 1450

CHAIN-OF-CUSTODY / Analytical Request Document
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Section A
Required Client Information

Company: GA Power
Address: Atlanta, GA
Email To: SCS Contacts
Phone: []
Requested Date/Date: []

Section B
Required Project Information

Report To: SCS Contacts
Copy To: Geosynthetic Contacts
Purchase Order No.: 5103
Project Name: Plant Hammond AP-2-Semiannual
Project Number: GW65819

Section C
Invoice Information

Attention: Southern Co.
Company Name: []
Address: []
Reference: Kevin Herring
Pace Project Manager
Pace Profile #: 2912-5

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Page: 2 of 3

Section D
Required Chain Information

Valid Matrix Codes
MATRIX CODE: WT, G, G
SAMPLE TYPE: (G=GRAB C=COMP)

ITEM #	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)	PH
1	HGWA-3	WT G	3/25	15:17				5	Unpreserved	Chloride, Fluoride, Sulfate	N	N	7.4
2	HGWA-2	WT G	3/25	16:32				5	H ₂ SO ₄ , HNO ₃ , HCl, NaOH, Na ₂ S ₂ O ₃ , Methanol, Other	TDS, Metals 6010/6020*, RAD 226/228	N	N	5.36
3		WT G						5			N	N	
4		WT G						5			N	N	
5		WT G						5			N	N	
6		WT G						5			N	N	
7		WT G						5			N	N	
8		WT G						5			N	N	
9		WT G						5			N	N	
10		WT G						5			N	N	
11		WT G						5			N	N	
12		WT G						5			N	N	

RELEASHER BY / AFFILIATION: Chad Russo
DATE: 3/25/2002
ACCEPTED BY / AFFILIATION: [Signature]
DATE: 3/25/2002
Temp in °C: []
Received on ice (Y/N): X
Custody Sealed Cooler (Y/N): N
Samples Intact (Y/N): Y

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-O-020/rev/07, 15-Feb-2007



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Section A Required Client Information: Company: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: _____ Fax: _____ Requested Due Date/TAT: 10 Day		Section B Required Project Information: Report to SCS Contacts Copy To: Geosynthetic Contacts Purchase Order No.: _____ Project Name: Plant Hammond AP-2 Semiannual Compliance Project Number: GW65518		Section C Invoice Information: Attention: Southern Co. Company Name: _____ Address: _____ State: _____ Zip: _____ Reference: Pace Project Manager Invoice #: 2912.5	
REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>			REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>		
Site Location: _____ STATE: GA			Residual Chlorine (Y/N) _____ pH = 7.39 Pace Project No./ Lab ID, 2630472		

ITEM #	Valid Matrix Codes (A-Z, 0-9, / -) SAMPLE ID Sample IDs MUST BE UNIQUE	Requested Client Information	Valid Matrix Codes CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)	pH =				
						DATE	TIME	DATE				TIME	Chloride, Fluoride, Sulfate	TDS	Metals:6010/6020*			RAD 228/228			
1	HCWA-6		GW		G	3/25/20	1715			5	2	3									
2			WT		G					5	2	3									
3			WT		G					5	2	3									
4			WT		G					5	2	3									
5			WT		G					5	2	3									
6			WT		G					5	2	3									
7			WT		G					5	2	3									
8			WT		G					5	2	3									
9			WT		G					5	2	3									
10			WT		G					5	2	3									
11			WT		G					5	2	3									
12			WT		G					5	2	3									

Section D Additional Comments: Please note dry wells, sludge through any wells not sampled, and note when the last sample for the event has been taken.		Relinquished by / Affiliation: _____ Date: 3/25/20 Time: 1817		Accepted by / Affiliation: _____ Date: 3/25/20 Time: 1812		Sample Conditions: Temp in °C: _____ Received on Ice (Y/N): _____ Custody Sealed Cooler (Y/N): _____ Samples Intact (Y/N): _____	
Relinquished by / Affiliation: _____ Date: 3/25/20 Time: 1817		Accepted by / Affiliation: _____ Date: 3/25/20 Time: 1812		Sample Conditions: Temp in °C: _____ Received on Ice (Y/N): _____ Custody Sealed Cooler (Y/N): _____ Samples Intact (Y/N): _____		Relinquished by / Affiliation: _____ Date: 3/25/20 Time: 1817	

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to site charges of 1.2% per month for any invoices not paid within 30 days.



CHAIN-OF-CUSTODY / Analytical Request Document
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Page: 1 of 1

Section A Required Client Information: Company: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: Fax Requested Data Deadline: 10 Day	Section B Required Project Information: Report To: SCS Contacts Copy To: Geosynthetic Contacts Purchase Order No.: Project Name: Plant Hammond AP-2-Semiannual Compliance Project Number: GW6581B	Section C Invoice Information: Attention: Southern Co. Company Name: Address: POC Name: Rose Guze POC Title: Rose Project Manager POC Phone #: 2812-5
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 (specify)		
Site Location: STATE: <u>GA</u>		

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives							Analysis Test			Residual Chlorine (Y/N)	pH =			
					DATE	TIME				DATE	TIME	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₅	Methanol	Other	Chloride, Fluoride, Sulfate			TDS	Metals 6010/6020*	RAD 228/228
1	HGLA-5	DRINKING WATER	WT G	G	3/26/20	9:30		5	2	3									X	X	X	X	N	6.38
2	HGLA-4	WASTE WATER	WT G	G	3/26/20	12:55		5	2	3									X	X	X	X	N	5.79
3	HGLA-15	WASTE WATER	WT G	G	3/26/20	14:38		5	2	3									X	X	X	X	N	6.03
4		WASTE WATER	WT G	G				5	2	3									X	X	X	X	N	
5		WASTE WATER	WT G	G				5	2	3									X	X	X	X	N	
6		WASTE WATER	WT G	G				5	2	3									X	X	X	X	N	
7		WASTE WATER	WT G	G				5	2	3									X	X	X	X	N	
8		WASTE WATER	WT G	G				5	2	3									X	X	X	X	N	
9		WASTE WATER	WT G	G				5	2	3									X	X	X	X	N	
10		WASTE WATER	WT G	G				5	2	3									X	X	X	X	N	
11		WASTE WATER	WT G	G				5	2	3									X	X	X	X	N	
12		WASTE WATER	WT G	G				5	2	3									X	X	X	X	N	

ADDITIONAL COMMENTS:

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

RELINQUISHED BY / AFFILIATION:

NAME	DATE	TIME	ACCEPTED BY / AFFILIATION:	DATE	TIME
Shavon Lynn, Geosynthetic	3/26/20	1805	Melissa McLaughlin, Pace	3/26/20	1805
Melissa McLaughlin, Geosynthetic	3/26/20	1943	Melissa McLaughlin, Geosynthetic	3/26/20	1943
Shavon Lynn, Pace	3/27/20	1541	Shavon Lynn, Pace	3/27/20	1541

SAMPLER NAME AND SIGNATURE: Shavon Lynn

POINT NAME OF SAMPLER: Shavon Lynn

SIGNATURE OF SAMPLER: *(Signature)*

DATE SIGNED (MM/DD/YYYY): 03/26/2020

Temp in °C: 5-7

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): N

Samples Intact (Y/N): Y



CHAIN-OF-CUSTODY / Analytical Request Document
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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:	
Email To: SCS Contacts Phone: Fax:		Purchase Order No.: 251 Project Name: Plant Hammond AP-2 Semiannual Compliance		Plant Code: References: Kevin Herring Pica Project Manager: Pica Profile #: 2912-5	
Requested Due Date/TAT: 10 Day		Project Number: GW6581B		Requested Analysis Filtered (Y/N): NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> Site Location: GA STATE:	

ITEM #	Valid Matrix Codes	MATRIX CODE	SAMPLE TYPE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)	pH =			
				DATE	TIME			DATE	TIME	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate			TDS	Metals 6010/6020*	RAD 226/228
1	Sample ID (AZ, 0-9, /,) Sample IDs MUST BE UNIQUE																					
2				3/27/20	16:10		5	2	3													
3							5	2	3													
4							5	2	3													
5							5	2	3													
6							5	2	3													
7							5	2	3													
8							5	2	3													
9							5	2	3													
10							5	2	3													
11							5	2	3													
12							5	2	3													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
	Shawlin Lim, Geosynthetic	3/27/20	16:46	Shawlin Lim, Geosynthetic	3/27/20	16:46					
	Mattie McWhorter, Geosynthetic	3/27/20	18:15	Mattie McWhorter, Geosynthetic	3/27/20	18:15					
	Shawlin Lim, Geosynthetic	3/27/20	10:20	Shawlin Lim, Geosynthetic	3/27/20	10:20					
	Shawlin Lim, Geosynthetic	3/30/20	13:00	Shawlin Lim, Geosynthetic	3/30/20	13:00					

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Shawlin Lim SIGNATURE of SAMPLER: <i>Shawlin Lim</i>		DATE Signed (MM/DD/YYYY): 03/27/2020	
--	--	--------------------------------------	--



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 Broker Information:
Company: GA Power	Report To: SCS Contacts	Attitioner: Southern Co.
Address: Atlanta, GA	Copy To: Geosyntec Contacts	Company Name:
Email To: SCS Contacts	Purchase Order No.:	Address:
Phone: [] Fax: []	Project Name: Plant Hammond AP-2/Seminarumal	Pace Quote Reference: Kevin Herring
Requested Due Date/TIME: 18:00	Project Number: GWS65818	Pace Project Manager: Kevin Herring
		Pace Contact # 2912-5

Section D Required Client Information	Valid Matrix Codes
<p>SAMPLE ID (A-Z, 0-9, /) Sample IDs MUST BE UNIQUE</p> <p>Matrix Code: HD-02</p>	DRINKING WATER WATER PRODUCT SOURCING OIL WASTE AIR OTHER TSS
MATRIX CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP) DATE TIME SAMPLE TEMP AT COLLECTION # OF CONTAINERS Unpreserved H ₂ SO ₄ HNO ₃ NaOH Na ₂ S ₂ O ₃ Methanol Other Analysis Test Chloride, Fluoride, Sulfate TDS Metals 5010/6020* RAD 228/228	COLLECTED COMPOSITE Preservatives Y/N Requested Analysis Filtered (Y/N)
Residual Chlorine (Y/N) Pace Project No./ Lab I.D. 2630472	

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE	SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H ₂ SO ₄	HNO ₃	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Analysis Test	Chloride, Fluoride, Sulfate	TDS	Metals 5010/6020*	RAD 228/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	HGLC-14				3/30/20	9:55				2									X	X	X	X	N	
2	FD-02				3/30/20					2									X	X	X	X	N	
3										2									X	X	X	X	N	
4										2									X	X	X	X	N	
5										2									X	X	X	X	N	
6										2									X	X	X	X	N	
7										2									X	X	X	X	N	
8										2									X	X	X	X	N	
9										2									X	X	X	X	N	
10										2									X	X	X	X	N	
11										2									X	X	X	X	N	
12										2									X	X	X	X	N	

ADDITIONAL COMMENTS	REINQUISHED BY / AFFILIATION
Please note city wells, strike through any wells not sampled, and note when the last sample for the event has been taken.	Shawn Lin / Geosyntec / 03/30/20 1735
Medical Machine / Pace / 3/31/20 1580	Medical Machine / Pace / 3/31/20 1580

REGULATORY AGENCY	REGULATORY AGENCY
<input type="checkbox"/> NPDES <input type="checkbox"/> UST <input type="checkbox"/> RCRA	<input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> OTHER
State: GA	State: GA
Sampler Name and Signature: Shawn Lin	Date Signed: 03/30/2020
Signature of Sampler: Shawn Lin	Date Signed (MM/DD/YY): 03/30/2020



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Requested Client Information: Company: **GA Power** Address: **Atlanta, GA** Section B Requested Project Information: Report To: **SCS Contacts** Copy To: **Geosynthetic Contacts** Section C Invoice Information: Adaptor: **Southern Co.** Company Name: **Southern Co.** Address: **Plant Hammond AP-2-Semiannual (Oak Ridge)** Pass Queue Reference: **Kevin Harting** Pass Project Manager: **Kevin Harting** Price Quote #: **2912-5** Requested Date Analyzed: **today** Project Number: **GW05878** Requested Analysis Filtered (Y/N)

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

Site Location: **GA** STATE:

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	Preservatives	Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)	Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
		MATRIX	CODE			DATE	TIME	DATE	TIME				Chloride, Fluoride, Sulfate	TDS	Metals 6010/6020*	RAD 226/228						
1	HGW C-16			WT G																		
2	FR-02			WT G	3/30	1125			19	5	2	3			X	X	X	X				
3				WT G	3/30	1735				5	2	3			X	X	X	X				
4				WT G						5	2	3			X	X	X	X				
5				WT G						5	2	3			X	X	X	X				
6				WT G						5	2	3			X	X	X	X				
7				WT G						5	2	3			X	X	X	X				
8				WT G						5	2	3			X	X	X	X				
9				WT G						5	2	3			X	X	X	X				
10				WT G						5	2	3			X	X	X	X				
11				WT G						5	2	3			X	X	X	X				
12				WT G						5	2	3			X	X	X	X				

Section D Required Client Information: SAMPLE ID **(A-Z, 0-9, /)** Sample IDs MUST BE UNIQUE

Section E Relinquished by Affiliator: **Chad Ruskoff/GCCO** DATE: **3/30/20** TIME: **1745** ACCEPTED BY AFFILIATOR: **Kevin Harting** DATE: **3/30/20** TIME: **1745**

Section F Sampler Name and Signature: **Chad Ruskoff** SIGNATURE: *[Signature]* DATE SIGNED (MANDATORY): **3/30/20**

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATOR	DATE	TIME	ACCEPTED BY / AFFILIATOR	DATE	TIME	SAMPLE CONDITIONS
	Chad Ruskoff/GCCO	3/30/20	1745	Kevin Harting	3/30/20	1745	
	Melinda Madson Geosynthetic	3/31/20	1135	Kevin Harting	3/31/20	1135	
	Kevin Harting / Pace	3/31/20	1530	Kevin Harting	3/31/20	1530	
	Chad Ruskoff	3/30/20	1745	Kevin Harting	3/30/20	1745	



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: Pace
 Requested Due Date/Time: 10 Day

Section B Required Project Information:

Report For: SCS Contacts
 Copy To: Geosyntec Contacts
 Purchase Order No.:
 Project Name: Plant Hammond AP-2 Semiannual
 Project Number: GWS6581B

Section C Invoice Information:

Attention: Southern Co.
 Address:
 Company Name:
 Requested Analysis Filtered (Y/N)
 Regulatory Agency:
 NPDES GROUND WATER
 UST RCRA DRINKING WATER
 OTHER
 State: GA

ITEM #	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	Preservatives							Analysis Test	Residual Chlorine (Y/N)	pH =		
												H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₅	Methanol	Other				Chloride, Fluoride, Sulfate	TDS
1	HgWC-17	MATRIX CODE: DW, WT, WW, P, SL, WP, AK, DT, TS	G	G	03/31/20	9:00	15	15		5	2	3	X	X	X	X	X	X	X	X	X	X	pH = 6.28
2	HgWC-18		G	G	03/31/20	13:00	15	15		5	2	3	X	X	X	X	X	X	X	X	X	X	pH = 4.43
3			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =
4			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =
5			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =
6			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =
7			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =
8			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =
9			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =
10			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =
11			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =
12			G	G						5	2	3	X	X	X	X	X	X	X	X	X	X	pH =

RELEASING BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Shawn Lin, Geosyntec	03/31/20	1418	Shawn Lin, Geosyntec	3-31-20	1418
Shawn Lin, Geosyntec	03/31/20	1845	Shawn Lin, Geosyntec	03/31/20	1845
Shawn Lin, Geosyntec	03/31/20	1030	Shawn Lin, Geosyntec	03/31/20	1030
Shawn Lin, Geosyntec	03/31/20	1410	Shawn Lin, Geosyntec	03/31/20	1410

ADDITIONAL COMMENTS	SAMPLER NAME AND SIGNATURE	PRINT Name of SAMPLER	SIGNATURE of SAMPLER	DATE Signed (MM/DD/YYYY)	Temp in °C	Received or Co (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Shawn Lin, Geosyntec	Shawn Lin	Shawn Lin	03/31/2020				
	Shawn Lin, Geosyntec	Shawn Lin	Shawn Lin	03/31/2020				
	Shawn Lin, Geosyntec	Shawn Lin	Shawn Lin	03/31/2020				
	Shawn Lin, Geosyntec	Shawn Lin	Shawn Lin	03/31/2020				
	Shawn Lin, Geosyntec	Shawn Lin	Shawn Lin	03/31/2020				

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section B Requested Project Information: Report for: SCS Contacts Copy To: Geosyntec Contacts

Section C Service Information: Atlanta: Southern Co. Company Name: Address: Pace Quote Reference: Kevin Henry

Requested Date Deferral: 10 Day Project Number: GW6561B

Requested Analysis Filtered (Y/N):

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER UST RCRA OTHER

Site Location: STATE: GA

Page: 1 of 2

Section D Requested Client Information: Valid Matrix Codes: DOMESTIC WATER, WASTE WATER, PRODUCT, SOIL/SOLID, OTHER TISSUE

Matrix Code: WT G

Sample Type: (G=GRAB C=COMP)

DATE: 4/1/20 TIME: 1204

SAMPLE TEMP AT COLLECTION: 54

OF CONTAINERS: 2

Preservatives: H₂SO₄, HNO₃, HCl, NaOH, Na₂S₂O₃, Methanol, Other

Analysis Test: Chloride, Fluoride, Sulfate, TDS, Metals 6010/6020*, RAD 228/228

Requested Analysis Filtered (Y/N):

Residual Chlorine (Y/N):

Temp in °C: 4.8

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): N

Samples Intact (Y/N): Y

ITEM #	MATRIX CODE	SAMPLE TYPE	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLER NAME AND SIGNATURE	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
			DATE	TIME												
1	WT G	G	4/1/20	1204	4/1/20	1648	4/1/20	1648	Kevin Henry / Pace	4/1/20	1648	Kevin Henry	4.8	Y	N	Y
2	WT G	G														
3	WT G	G														
4	WT G	G														
5	WT G	G														
6	WT G	G														
7	WT G	G														
8	WT G	G														
9	WT G	G														
10	WT G	G														
11	WT G	G														
12	WT G	G														

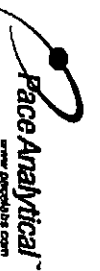
Section E ADDITIONAL COMMENTS: Please note dry wells, spikes through any wells not sampled, and note when the last sample for the event has been taken.

Section F REINSPECTED BY / AFFILIATION: DATE: 4/1/20 TIME: 1648 ACCEPTED BY / AFFILIATION: Kevin Henry / Pace DATE: 4/1/20 TIME: 1648

Section G SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: Aaron Reeder SIGNATURE of SAMPLER: Aaron Reeder DATE Signed (MM/DD/YYYY): 04/01/2020

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

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

Section B Requested Project Information: Report To: SCS Contacts Copy To: Geosynthetic Contacts

Section C Invoice Information: Attention: Southern Co. Company Name: Address: See Gate Reference: Kevin Harting

Requested Date Delivered: 10 Day Project Name: Plant Hammond AP-2 Semiannual Cooling Water Sampling Project Project Number: GW65818

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

ITEM #	Section D Requested 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	Preservatives						Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH =		
					DATE	TIME	DATE			UNPRESERVED	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₅					Methanol	Other
1	MW-33	DOMESTIC WATER DW WASTE WATER WW SEWAGE SLUDGE S OIL OIL WIFE WIFE AIR AIR OTHER OTHER TISSUE TISSUE			4/1	1002	1137	17	5	2	3										
2	MW-23D				4/1	1137		17	5	2	3										
3									5	2	3										
4									5	2	3										
5									5	2	3										
6									5	2	3										
7									5	2	3										
8									5	2	3										
9									5	2	3										
10									5	2	3										
11									5	2	3										
12									5	2	3										

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Chad Rudderico	4/1/20	1315	Melia Johnson Leavette	4/1/20	1648	4.8	Y	N	Y
Melia Johnson Leavette	4/2/20	1025	Thomas D. Price	4/2/20	1025		Y	N	Y
Thomas D. Price	4/2/20	1405	William Paul Price	4/2/20	1405		Y	N	Y

PRINT Name of SAMPLER: Chad Russo
SIGNATURE of SAMPLER: [Signature]
DATE Signed (MM/DD/YYYY): 4/1/2020

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.
F-ALL-Q-020rev.07, 15-Feb-2007

April 24, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2630472
Pace Project No.: 30356789

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 27, 2020 and April 03, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,



Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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

Project: 2630472
Pace Project No.: 30356789

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: 2630472
Pace Project No.: 30356789

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2630472001	HGWA-1	Water	03/25/20 15:56	03/27/20 10:35
2630472002	HGWA-3	Water	03/25/20 15:17	03/27/20 10:35
2630472003	HGWA-2	Water	03/25/20 16:32	03/27/20 10:35
2630472004	HGWA-6	Water	03/25/20 17:15	03/27/20 10:35
2630472005	HGWA-5	Water	03/26/20 09:20	03/31/20 09:00
2630472006	HGWA-4	Water	03/26/20 12:55	03/31/20 09:00
2630472007	HGWC-15	Water	03/26/20 14:45	03/31/20 09:00
2630472008	MW-22	Water	03/27/20 16:10	03/31/20 09:00
2630472013	HGWC-17	Water	03/31/20 09:00	04/02/20 09:20
2630472014	HGWC-18	Water	03/31/20 13:30	04/02/20 09:20
2630472015	MW-21D	Water	04/01/20 12:04	04/03/20 09:20
2630472016	MW-33	Water	04/01/20 10:02	04/03/20 09:20
2630472017	MW-23D	Water	04/01/20 11:37	04/03/20 09:20
2630472009	HGWC-14	Water	03/30/20 09:55	04/03/20 09:20
2630472010	FD-02	Water	03/30/20 00:01	04/03/20 09:20
2630472011	HGWC-16	Water	03/30/20 11:25	04/03/20 09:20
2630472012	FB-02	Water	03/30/20 17:35	04/03/20 09:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2630472
Pace Project No.: 30356789

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630472001	HGWA-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472002	HGWA-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472003	HGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472004	HGWA-6	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472005	HGWA-5	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472006	HGWA-4	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472007	HGWC-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472008	MW-22	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472013	HGWC-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472014	HGWC-18	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472015	MW-21D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472016	MW-33	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472017	MW-23D	EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2630472
Pace Project No.: 30356789

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630472009	HGWC-14	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
2630472010	FD-02	Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472011	HGWC-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
2630472012	FB-02	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWA-1		Lab ID: 2630472001	Collected: 03/25/20 15:56	Received: 03/27/20 10:35	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.221 ± 0.110 (0.164) C:93% T:NA	pCi/L	04/07/20 19:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	4.14 ± 0.967 (0.705) C:78% T:84%	pCi/L	04/15/20 14:46	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	4.36 ± 1.08 (0.869)	pCi/L	04/21/20 12:17	7440-14-4	

Sample: HGWA-3		Lab ID: 2630472002	Collected: 03/25/20 15:17	Received: 03/27/20 10:35	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.377 ± 0.123 (0.132) C:95% T:NA	pCi/L	04/07/20 19:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.456 ± 0.433 (0.892) C:80% T:80%	pCi/L	04/16/20 14:15	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.833 ± 0.556 (1.02)	pCi/L	04/21/20 12:17	7440-14-4	

Sample: HGWA-2		Lab ID: 2630472003	Collected: 03/25/20 16:32	Received: 03/27/20 10:35	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.621 ± 0.163 (0.126) C:95% T:NA	pCi/L	04/07/20 19:13	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.0793 ± 0.309 (0.742) C:82% T:81%	pCi/L	04/16/20 14:15	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.621 ± 0.472 (0.868)	pCi/L	04/21/20 12:17	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWA-6		Lab ID: 2630472004	Collected: 03/25/20 17:15	Received: 03/27/20 10:35	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.495 ± 0.147 (0.152) C:94% T:NA	pCi/L	04/07/20 19:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.0139 ± 0.356 (0.817) C:81% T:94%	pCi/L	04/16/20 14:15	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.509 ± 0.503 (0.969)	pCi/L	04/21/20 12:22	7440-14-4	

Sample: HGWA-5		Lab ID: 2630472005	Collected: 03/26/20 09:20	Received: 03/31/20 09:00	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	0.416 ± 0.283 (0.440) C:85% T:NA	pCi/L	04/09/20 08:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.491 ± 0.585 (1.23) C:74% T:82%	pCi/L	04/20/20 19:21	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.907 ± 0.868 (1.67)	pCi/L	04/21/20 12:22	7440-14-4	

Sample: HGWA-4		Lab ID: 2630472006	Collected: 03/26/20 12:55	Received: 03/31/20 09:00	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	0.293 ± 0.227 (0.348) C:88% T:NA	pCi/L	04/09/20 08:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.285 ± 0.564 (1.24) C:75% T:83%	pCi/L	04/20/20 19:23	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.578 ± 0.791 (1.59)	pCi/L	04/21/20 12:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWC-15		Lab ID: 2630472007	Collected: 03/26/20 14:45	Received: 03/31/20 09:00	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	0.132 ± 0.166 (0.328) C:85% T:NA		pCi/L	04/09/20 08:30	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.723 ± 0.589 (1.18) C:75% T:85%		pCi/L	04/20/20 19:24	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.855 ± 0.755 (1.51)		pCi/L	04/21/20 12:22	7440-14-4	

Sample: MW-22		Lab ID: 2630472008	Collected: 03/27/20 16:10	Received: 03/31/20 09:00	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	0.183 ± 0.209 (0.414) C:88% T:NA		pCi/L	04/09/20 08:30	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.777 ± 0.567 (1.10) C:75% T:89%		pCi/L	04/20/20 19:25	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.960 ± 0.776 (1.51)		pCi/L	04/21/20 12:22	7440-14-4	

Sample: HGWC-17		Lab ID: 2630472013	Collected: 03/31/20 09:00	Received: 04/02/20 09:20	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	0.404 ± 0.322 (0.602) C:95% T:NA		pCi/L	04/09/20 07:51	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.187 ± 0.368 (0.810) C:75% T:86%		pCi/L	04/21/20 14:05	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.591 ± 0.690 (1.41)		pCi/L	04/22/20 10:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWC-18		Lab ID: 2630472014	Collected: 03/31/20 13:30	Received: 04/02/20 09:20	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	1.99 ± 0.587 (0.361) C:91% T:NA	pCi/L	04/09/20 07:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.706 ± 0.457 (0.878) C:78% T:85%	pCi/L	04/21/20 14:05	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	2.70 ± 1.04 (1.24)	pCi/L	04/22/20 10:22	7440-14-4	

Sample: MW-21D		Lab ID: 2630472015	Collected: 04/01/20 12:04	Received: 04/03/20 09:20	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	0.462 ± 0.298 (0.402) C:88% T:NA	pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.296 ± 0.341 (0.716) C:82% T:82%	pCi/L	04/22/20 11:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.758 ± 0.639 (1.12)	pCi/L	04/23/20 09:27	7440-14-4	

Sample: MW-33		Lab ID: 2630472016	Collected: 04/01/20 10:02	Received: 04/03/20 09:20	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	1.11 ± 0.442 (0.446) C:96% T:NA	pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.46 ± 0.479 (0.639) C:82% T:87%	pCi/L	04/22/20 11:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	2.57 ± 0.921 (1.09)	pCi/L	04/23/20 09:27	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: MW-23D		Lab ID: 2630472017	Collected: 04/01/20 11:37	Received: 04/03/20 09:20	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	0.213 ± 0.244 (0.486) C:93% T:NA	pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.701 ± 0.385 (0.687) C:79% T:81%	pCi/L	04/22/20 11:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.914 ± 0.629 (1.17)	pCi/L	04/23/20 09:27	7440-14-4	

Sample: HGWC-14		Lab ID: 2630472009	Collected: 03/30/20 09:55	Received: 04/03/20 09:20	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	0.908 ± 0.400 (0.417) C:96% T:NA	pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.172 ± 0.345 (0.761) C:77% T:88%	pCi/L	04/22/20 14:09	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.08 ± 0.745 (1.18)	pCi/L	04/23/20 09:27	7440-14-4	

Sample: FD-02		Lab ID: 2630472010	Collected: 03/30/20 00:01	Received: 04/03/20 09:20	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	0.954 ± 0.416 (0.471) C:97% T:NA	pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.601 ± 0.437 (0.857) C:78% T:83%	pCi/L	04/22/20 14:09	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.56 ± 0.853 (1.33)	pCi/L	04/23/20 09:27	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWC-16		Lab ID: 2630472011	Collected: 03/30/20 11:25	Received: 04/03/20 09:20	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	0.212 ± 0.200 (0.348) C:95% T:NA	pCi/L	04/10/20 07:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.0764 ± 0.374 (0.855) C:80% T:78%	pCi/L	04/22/20 14:09	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.288 ± 0.574 (1.20)	pCi/L	04/23/20 09:27	7440-14-4	

Sample: FB-02		Lab ID: 2630472012	Collected: 03/30/20 17:35	Received: 04/03/20 09:20	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	0.0356 ± 0.262 (0.666) C:85% T:NA	pCi/L	04/10/20 07:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.238 ± 0.371 (0.804) C:76% T:88%	pCi/L	04/22/20 14:09	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.274 ± 0.633 (1.47)	pCi/L	04/23/20 09:27	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 390462	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472001

METHOD BLANK: 1890903 Matrix: Water

Associated Lab Samples: 2630472001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.720 ± 0.398 (0.719) C:76% T:93%	pCi/L	04/15/20 14:44	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 391022	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472013, 2630472014

METHOD BLANK: 1893294 Matrix: Water

Associated Lab Samples: 2630472013, 2630472014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0953 ± 0.154 (0.334) C:90% T:NA	pCi/L	04/09/20 08:10	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 390592	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

METHOD BLANK: 1891464 Matrix: Water
Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.444 ± 0.130 (0.104) C:98% T:NA	pCi/L	04/07/20 18:26	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 390595	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472002, 2630472003, 2630472004

METHOD BLANK: 1891467 Matrix: Water

Associated Lab Samples: 2630472002, 2630472003, 2630472004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.544 ± 0.340 (0.632) C:84% T:88%	pCi/L	04/16/20 14:15	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 391344	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012, 2630472015, 2630472016, 2630472017

METHOD BLANK: 1894737 Matrix: Water

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012, 2630472015, 2630472016, 2630472017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.298 (0.570) C:82% T:90%	pCi/L	04/22/20 11:02	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch:	391017	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472005, 2630472006, 2630472007, 2630472008

METHOD BLANK: 1893284 Matrix: Water

Associated Lab Samples: 2630472005, 2630472006, 2630472007, 2630472008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.237 ± 0.214 (0.384) C:97% T:NA	pCi/L	04/09/20 07:54	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch:	391019	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472005, 2630472006, 2630472007, 2630472008

METHOD BLANK: 1893286 Matrix: Water

Associated Lab Samples: 2630472005, 2630472006, 2630472007, 2630472008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.771 ± 0.384 (0.663) C:74% T:88%	pCi/L	04/20/20 12:18	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 391023	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472013, 2630472014

METHOD BLANK: 1893295 Matrix: Water

Associated Lab Samples: 2630472013, 2630472014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.258 ± 0.334 (0.711) C:83% T:83%	pCi/L	04/21/20 11:02	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 391343	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012, 2630472015, 2630472016, 2630472017

METHOD BLANK: 1894734 Matrix: Water

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012, 2630472015, 2630472016, 2630472017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.103 ± 0.0985 (0.172) C:82% T:NA	pCi/L	04/09/20 15:48	

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QUALIFIERS

Project: 2630472
Pace Project No.: 30356789

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

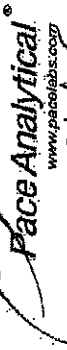
State Of Origin: GA

Cert. Needed: Yes No

Workorder: 2630472 Workorder Name: AP-2 1ST SEMI ANNUAL COMPLIANCE Owner Received Date: 3/26/2020 Results Requested By: 4/9/2020

Kevin Herring
Pace Analytical Charlotte
9800 Kinsey Ave.
Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2,3, & 4
Greensburg, PA 15601
Phone (724)850-5600



WO#: 30356789



Item	Sample ID	Sample Type	Salvage	Collect Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY
							HNO3		
1	HGWA-1	PS		3/25/2020 15:58	2630472001	Water	X	2	CC1
2	HGWA-3	PS		3/25/2020 15:17	2630472002	Water	X	2	CC2
3	HGWA-2	PS		3/25/2020 16:32	2630472003	Water	X	2	CC3
4	HGWA-6	PS		3/25/2020 17:15	2630472004	Water	X	2	CC4
5									

RAD 931S
RAD 9320

Transfers	Released By	Date/Time	Received By	Date/Time
1			<i>[Signature]</i>	3/26/2020 10:15
2				
3				

Cooler Temperature on Receipt *NA* °C Custody Seal *Y* or *N* Received on Ice *Y* or *N* Samples Intact *X* or *N*

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

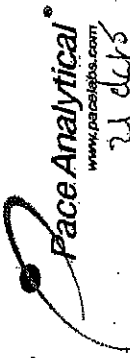
State of Origin: GA
 Cert. Needed: Yes No

Workorder: 2630472
 Kevin Herring
 Pace Analytical Charlotte
 9800 Kinney Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Workorder Name: AP-2 1ST SEMIANNUAL COMPLIANCE

Owner Received Date: 3/26/2020

Results Requested By: 4/9/2020



Item	Sample ID	Sample Type	Collection Date/Time	Lab ID	Matrix	HNOS	Received By	Date/Time	Released By	Received By	Date/Time	LAB USE ONLY
1	HGWA-1	PS	3/25/2020 15:58	2630472001	Water	1	<i>[Signature]</i>	3/25/2020 15:58	<i>[Signature]</i>	<i>[Signature]</i>	3/25/2020 15:58	
2	HGWA-3	PS	3/25/2020 15:45	2630472002	Water	1	<i>[Signature]</i>	3/25/2020 15:45	<i>[Signature]</i>	<i>[Signature]</i>	3/25/2020 15:45	
3	HGWA-2	PS	3/25/2020 16:35	2630472003	Water	1	<i>[Signature]</i>	3/25/2020 16:35	<i>[Signature]</i>	<i>[Signature]</i>	3/25/2020 16:35	
4	HGWA-4	PS	3/25/2020 17:15	2630472004	Water	1	<i>[Signature]</i>	3/25/2020 17:15	<i>[Signature]</i>	<i>[Signature]</i>	3/25/2020 17:15	
5	HGWA-5	PS	3/26/2020 09:20	2630472005	Water	1	<i>[Signature]</i>	3/26/2020 09:20	<i>[Signature]</i>	<i>[Signature]</i>	3/26/2020 09:20	
6	HGWA-4	PS	3/26/2020 12:55	2630472006	Water	1	<i>[Signature]</i>	3/26/2020 12:55	<i>[Signature]</i>	<i>[Signature]</i>	3/26/2020 12:55	
7	HGWA-15	PS	3/26/2020 14:45	2630472007	Water	1	<i>[Signature]</i>	3/26/2020 14:45	<i>[Signature]</i>	<i>[Signature]</i>	3/26/2020 14:45	

WO#: 30356789
 PM: JAC Due Date: 04/17/20
 CLIENT: PACE_26_ATGA

Add on project

Cooler Temperature on Receipt *NA* °C Custody Seal *R or N* Received on Ice *Y or N* Samples Intact *Y or N*

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State of Origin: GA Yes No

Cert. Needed: Yes No

Workorder: 2630472 Workorder Name: AP-2 1ST SEMIANNUAL COMPLIANCE

Owner Received Date: 3/26/2020 Results Requested By: *W. Kelly*

Kevin Henning
Pace Analytical Charlotte
9800 Kinsey Ave.
Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Pace Analytical Pittsburgh
1638 Rosoytown Road
Suites 2,3, & 4
Greensburg, PA 15601
Phone (724)850-5600

WO# : 30356789

PM: JAC Due Date: 04/17/20

CLIENT: PACE_26_ATGA

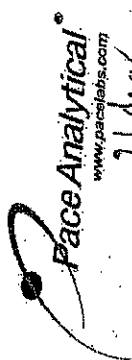
Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N	LAB USE ONLY
1									
2									
3									
Cooler Temperature on Receipt °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N									
1									
2									
3									

Add on project

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.



State Of Origin: GA
 Cert. Needed: Yes No
 Owner Received Date: 3/26/2020 Results Requested By: *U. G. S.*
 Requested Analysis: *4/9/2020*

Workorder: 2630472 Workorder Name: HAMMOND AP-2 1ST SEMI ANNUAL
 Report to: *Subcontracting*

Kevin Herring
 Pace Analytical Charlotte
 9800 Kinney Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-5600

WO#: 30356789
 PM: JAC Due Date: 04/17/20
 CLIENT: PACE_26_ATGA

Lab Sample ID	Sample Type	Sample ID	Collect Date/Time	Sample Matrix	Preserve in Containers	NO.3	RAD 9315	RAD 9320	LAB USE ONLY
1	HGWA-1	PS	3/25/2020 15:56	2630472001	Water		X		
2	HGWA-3	PS	3/25/2020 15:17	2630472002	Water	1	X		
3	HGWA-2	PS	3/25/2020 16:32	2630472003	Water	1	X		
4	HGWA-6	PS	3/25/2020 17:15	2630472004	Water	1	X		
5	HGWA-5	PS	3/26/2020 09:20	2630472005	Water	1	X		
6	HGWA-4	PS	3/26/2020 12:55	2630472006	Water	1	X		
7	HGWA-15	PS	3/26/2020 14:45	2630472007	Water	1	X		
8	MW-22	S	3/27/2020 16:00	2630472008	Water	1	X		
9	HGWC-14	PS	3/30/2020 09:55	2630472009	Water	1	X		
10	FD-02	PS	3/30/2020 00:00	2630472010	Water	1	X		
11	HGWC-16	PS	3/30/2020 11:25	2630472011	Water	1	X		
12	FR-01	PS	3/30/2020 17:35	2630472012	Water	1	X		
13	HGWC-17	PS	3/31/2020 09:00	2630472013	Water	1	X		
14	HGWC-18	PS	3/31/2020 13:30	2630472014	Water	1	X		

013
019

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Y or N	Samples Intact	Y or N
1	[Signature]	4/12/2020	[Signature]	4/12/2020					
2									
3									

Cooler Temperature on Receipt 11.7°C

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA

Cert. Needed: Yes No

Workorder: 2630472
 Report to: Kevin Hening
 Pace Analytical Charlotte
 9800 Kinney Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Workorder Name: AP-2 1ST SEMIANNUAL COMPLIANCE
 Subcontract to: Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-5600

Requested Analysis: RAD 9315
 RAD 9320
 Results Requested By: 21 dca
 4/9/2020

WO#: 30356789

PM: JAC Due Date: 04/23/20
 CLIENT: PACE_25_ATGA

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	SONH	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	HGWA-1	PS	3/25/2020 15:56	2630472001	Water	1	XXXXXXXXXX	3/25/2020 15:56	X	Y	Y	N
2	HGWA-3	PS	3/25/2020 15:17	2630472002	Water	1	XXXXXXXXXX	3/25/2020 15:17	X	Y	Y	N
3	HGWA-2	PS	3/25/2020 16:32	2630472003	Water	1	XXXXXXXXXX	3/25/2020 16:32	X	Y	Y	N
4	HGWA-6	PS	3/25/2020 17:15	2630472004	Water	1	XXXXXXXXXX	3/25/2020 17:15	X	Y	Y	N
5	HGWA-5	PS	3/26/2020 09:20	2630472005	Water	1	XXXXXXXXXX	3/26/2020 09:20	X	Y	Y	N
6	HGWA-4	PS	3/26/2020 12:55	2630472006	Water	1	XXXXXXXXXX	3/26/2020 12:55	X	Y	Y	N
7	HGWA-15	PS	3/26/2020 14:45	2630472007	Water	1	XXXXXXXXXX	3/26/2020 14:45	X	Y	Y	N
8	MWA-1	PS	3/27/2020 16:10	2630472008	Water	1	XXXXXXXXXX	3/27/2020 16:10	X	Y	Y	N
9	HGWC-14	PS	3/30/2020 09:55	2630472009	Water	1	XXXXXXXXXX	3/30/2020 09:55	X	Y	Y	N
10	FD-02	PS	3/30/2020 00:00	2630472010	Water	1	XXXXXXXXXX	3/30/2020 00:00	X	Y	Y	N
11	HGWC-16	PS	3/30/2020 11:25	2630472011	Water	1	XXXXXXXXXX	3/30/2020 11:25	X	Y	Y	N
12	FB-02	PS	3/30/2020 17:35	2630472012	Water	1	XXXXXXXXXX	3/30/2020 17:35	X	Y	Y	N

Transfers	Released By	Date/Time	Received By	Date/Time
1	<i>[Signature]</i>	3/25/2020 17:00	<i>[Signature]</i>	3/25/2020 17:00
2				
3				

Cooler Temperature on Receipt: 44°C Custody Seal: Y or N Received on Ice: Y or N Samples Intact: Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace CA

Project # 30356789

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1657 9507 1789

Label <u>OK</u>
LIMS Login <u>OK</u>

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C
Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and initials of person examining contents:
				<u>1002196</u>	<u>OK 3-30-20</u>
Chain of Custody Present:	/				
Chain of Custody Filled Out:	/				
Chain of Custody Relinquished:		/			
Sampler Name & Signature on COC:		/			
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	/				
Samples Arrived within Hold Time:	/				
Short Hold Time Analysis (<72hr remaining):	/				
Rush Turn Around Time Requested:	/				
Sufficient Volume:	/				
Correct Containers Used: -Pace Containers Used:	/				
Containers Intact:	/				
Orthophosphate field filtered			/		
Hex Cr Aqueous sample field filtered			/		
Organic Samples checked for dechlorination:			/		
Filtered volume received for Dissolved tests			/		
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	/			<u>PT102</u>	
All containers meet method preservation requirements.	/			Initial when completed <u>OK</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			/		
Trip Blank Present:			/		
Trip Blank Custody Seals Present			/		
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed <u>OK</u>	Date: <u>3-30-20</u>

Client Notification/ Resolution:

Person-Contacted: _____ Date/Time: _____ Contacted-By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

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

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO#: 30356789

Pittsburgh Lab Sample Condition Upon Receipt

PM: JAC

Due Date: 04/17/20

CLIENT: PACE_26_ATGA



Client Name: Pace GA

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1657 9507 2167

Label	<u>AK</u>
LIMS Login	<u>AK</u>

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:
				<u>10DZ191</u>	<u>DIC 3-31-20</u>
Chain of Custody Present:					1.
Chain of Custody Filled Out:					2.
Chain of Custody Relinquished:					3.
Sampler Name & Signature on COC:					4.
Sample Labels match COC:					5.
-Includes date/time/ID Matrix: <u>WT</u>					
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>				6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>				7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>				8.
Sufficient Volume:	<input checked="" type="checkbox"/>				9.
Correct Containers Used:	<input checked="" type="checkbox"/>				10.
-Pace Containers Used:	<input checked="" type="checkbox"/>				
Containers Intact:	<input checked="" type="checkbox"/>				11.
Orthophosphate field filtered	<input checked="" type="checkbox"/>				12.
Hex Cr Aqueous sample field filtered	<input checked="" type="checkbox"/>				13.
Organic Samples checked for dechlorination:	<input checked="" type="checkbox"/>				14.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/>				15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>				16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>PHCZ</u>	
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>			Initial when completed <u>DIC</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			<input checked="" type="checkbox"/>		17.
Trip Blank Present:			<input checked="" type="checkbox"/>		18.
Trip Blank Custody Seals Present			<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>			Initial when completed: <u>DIC</u>	Date: <u>3-31-20</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in e-reports.

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

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Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace-Indy

Project # #30356789

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1057 9507 2936 / 1057 9507 2974

Label NY
LIMS Login NY

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

Thermometer Used NA Type of Ice: Wet Blue None

Cooler Temperature _____ Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C
Temp should be above freezing to 6°C

Comments:	pH paper Lot# <u>1002191</u>			Date and Initials of person examining contents: <u>NY 4/2/2020</u>
	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:		/		4.
Sample Labels match COC: -Includes date/time/ID Matrix: <u>MT</u>	/			5.
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used: -Pace Containers Used:	/			10.
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous sample field filtered			/	13.
Organic Samples checked for dechlorination:			/	14.
Filtered volume received for Dissolved tests			/	15.
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	/			16.
All containers meet method preservation requirements.	/			Initial when completed: <u>NY</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):		/		17.
Trip Blank Present:		/		18.
Trip Blank Custody Seals Present			/	
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed: <u>NY</u> Date: <u>4/2/2020</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

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

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: WACO-NC

Project # #30356789

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1057 9507 2985

Label <u>[Signature]</u>
LIMS Login <u>[Signature]</u>

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

Thermometer Used NA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C
Temp should be above freezing to 6°C

pH paper Lot# <u>1002191</u>	Date and initials of person examining contents: <u>NG 4/3/2020</u>
------------------------------	--

Comments:

	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>NA</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):	/			7.
Rush Turn Around Time Requested:	/			8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered	/		/	12.
Hex Cr Aqueous sample field filtered	/		/	13.
Organic Samples checked for dechlorination:	/		/	14.
Filtered volume received for Dissolved tests	/		/	15.
All containers have been checked for preservation.	/			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>DN12</u>
All containers meet method preservation requirements.	/			Initial when completed: <u>NG</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	/			17.
Trip Blank Present:	/			18.
Trip Blank Custody Seals Present	/			
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed: <u>NG</u> Date: <u>4/3/2020</u>

Client Notification/ Resolution:

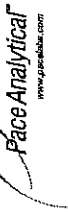
Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Quality Control Sample Performance Assessment



Test: Ra-226
Analyst: LAL
Date: 4/7/2020
Worklist: 53223
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1891464
MB concentration:	0.444
M/B Counting Uncertainty:	0.113
MB MDC:	0.104
MB Numerical Performance Indicator:	7.66
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCS/D (Y or N)?	Y
LCS53223	47/2020
Count Date:	4/7/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.509
Target Conc. (pCi/L, g, F):	4.761
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.967
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.343
Numerical Performance Indicator:	1.16
Percent Recovery:	104.32%
Status vs Numerical Indicator:	N/A
Upper % Recovery Limits:	Pass
Lower % Recovery Limits:	125%
	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS53223
Duplicate Sample I.D.:	LCS53223
Sample Result (pCi/L, g, F):	4.967
Sample Duplicate Result (pCi/L, g, F):	0.343
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.483
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.323
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	2.012
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	9.51%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

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

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

Cue 4/8/20

LAMY 18/20

Quality Control Sample Performance Assessment



Analyst: Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/7/2020
Worklist: 53223
Matrix: DW

Method Blank Assessment	
MB Sample ID	1891464
MB concentration:	0.444
M/B Counting Uncertainty:	0.113
MB MDC:	0.104
MB Numerical Performance Indicator:	7.66
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCSID (Y or N)?	N
LCS53223	LCS53223
Count Date:	4/7/2020
Spike ID:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.505
Target Conc. (pCi/L, g, F):	4.761
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.967
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.343
Numerical Performance Indicator:	1.16
Percent Recovery:	104.32%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2630417003
Duplicate Sample I.D.:	2630417003DUP
Sample Result (pCi/L, g, F):	0.696
Sample Result Counting Uncertainty (pCi/L, g, F):	0.140
Sample Duplicate Result (pCi/L, g, F):	0.776
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.142
Are sample and/or duplicate results below RL?	See Below #
Duplicate RPD:	-0.786
Duplicate Numerical Performance Indicator:	10.88%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

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

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
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.:	
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:	

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Quality Control Sample Performance Assessment



Test: Ra-228
Analyst: LAL
Date: 4/8/2020
Worklist: 53275
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1893284
MB concentration:	0.237
M/B Counting Uncertainty:	0.211
MB MDC:	0.384
MB Numerical Performance Indicator:	2.20
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCSD53275	LCSD53275
Count Date:		4/9/2020	
Spike I.D.:		19-033	
Decay Corrected Spike Concentration (pCi/mL):		24.049	
Volume Used (mL):		0.10	
Aliquot Volume (L, g, F):		0.516	
Target Conc. (pCi/L, g, F):		4.665	
Uncertainty (Calculated):		0.056	
Result (pCi/L, g, F):		4.878	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.791	
Numerical Performance Indicator:		0.53	
Percent Recovery:		104.56%	
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.:	92471690009	92471690009
Duplicate Sample I.D.:	92471690009DUP	92471690009DUP
Sample Result (pCi/L, g, F):	5.860	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.912	
Sample Duplicate Result (pCi/L, g, F):	5.701	
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.866	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.248	
Duplicate RPD:	2.76%	
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:

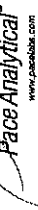
Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:</p> <p>M/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L,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

Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D. Sample MS I.D. Sample MSD I.D.</p> <p>Sample Matrix Spike Result: 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:</p>

Analyst: LAL
Date: 4/9/20

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Quality Control Sample Performance Assessment



Test: Ra-226
Analyst: LAL
Date: 4/8/2020
Worklist: 53275
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1893284
MB concentration:	0.237
M/B Counting Uncertainty:	0.211
MB MDC:	0.384
MB Numerical Performance Indicator:	2.20
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS53275	Y
Count Date:	4/9/2020	LCS53275
Spike ID:	19-033	4/9/2020
Decay Corrected Spike Concentration (pCi/mL):	24.049	24.049
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.516	0.509
Target Conc. (pCi/L, g, F):	4.665	4.723
Uncertainty (Calculated):	0.056	0.057
Result (pCi/L, g, F):	4.878	4.715
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.791	0.783
Numerical Performance Indicator:	0.53	-0.02
Percent Recovery:	104.58%	99.84%
Status vs Numerical Indicator:	N/A	N/A
Upper % Recovery Limits:	Pass	Pass
Lower % Recovery Limits:	125%	125%
	75%	75%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	9247189009
Duplicate Sample I.D.:	9247189009DUP
Sample Result (pCi/L, g, F):	
Sample Duplicate Result (pCi/L, g, F):	
Sample Duplicate Counting Uncertainty (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:	

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

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

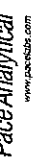
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/8/2020
Worklist: 53277
Matrix: DW

Method Blank Assessment	
MB Sample ID	1993294
MB concentration:	0.095
MB Counting Uncertainty:	0.153
MB MDC:	0.334
MB Numerical Performance Indicator:	1.22
MB Status vs. Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCS# (Y or N)?	N
LCS53277	LCS53277
Count Date:	4/9/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.523
Target Conc. (pCi/L, g, F):	4.599
Uncertainty (Calculated):	0.055
Result (pCi/L, g, F):	4.126
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.715
Numerical Performance Indicator:	-1.29
Percent Recovery:	89.70%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2630471009
Duplicate Sample I.D.:	2630471009DUP
Sample Result (pCi/L, g, F):	0.669
Sample Result Counting Uncertainty (pCi/L, g, F):	0.341
Sample Duplicate Result (pCi/L, g, F):	0.303
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.268
Are sample and/or duplicate results below RL?	See Below##
Duplicate Numerical Performance Indicator:	1.654
Duplicate RPD:	NS-29%
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.

***Batch must be reprocessed due to unacceptable precision. N/A 4/11/20

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.:	
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):	
MSD 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:	
MMS/MSD Upper % Recovery Limits:	
MMS/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:	

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/8/2020
Worklist: 53277
Matrix: DW

Method Blank Assessment	
MB Sample ID	1893294
MB concentration:	0.095
MB Counting Uncertainty:	0.153
MB MDC:	0.334
MB Numerical Performance Indicator:	1.22
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	Y
		LCS53277	LCS53277
Count Date:		4/9/2020	
Spike I.D.:		19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):		24.049	24.049
Volume Used (mL):		0.10	0.10
Aliquot Volume (L, g, F):		0.509	0.509
Target Conc. (pCi/L, g, F):		4.599	4.729
Uncertainty (Calculated):		0.055	0.057
Result (pCi/L, g, F):		4.126	4.884
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.715	0.752
Numerical Performance Indicator:		-1.29	0.40
Percent Recovery:		89.70%	103.29%
Status vs Numerical Indicator:		N/A	N/A
Status vs Recovery:		Pass	Pass
Upper % Recovery Limits:		125%	125%
Lower % Recovery Limits:		75%	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS53277
Duplicate Sample I.D.:	LCS53277
Sample Result (pCi/L, g, F):	4.126
Sample Result Counting Uncertainty (pCi/L, g, F):	0.715
Sample Duplicate Result (pCi/L, g, F):	4.884
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.752
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.433
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	14.08%
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: 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): 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:</p>		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D. Sample MS I.D. Sample MSD I.D.</p> <p>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:</p>

AM 4/9/20

LAB 4-9-20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/9/2020
Worklist: 53324
Matrix: DW

Method Blank Assessment	MB Sample ID	Count Date	Count	Y
MB concentration:	1894734	4/10/2020	47102020	LCS53324
M/R Counting Uncertainty:	0.103	19-033	19-033	47102020
MB MDC:	0.097	24.049	24.049	
MB Numerical Performance Indicator:	0.172	0.10	0.10	
MB Status vs. MDC:	2.07	0.506	0.509	
	N/A	4.752	4.723	
	Pass	0.057	0.057	
		5.519	4.383	
		1.83	0.820	
		116.14%	0.711	
		N/A	-0.93	
		Pass	N/A	
		125%	Pass	
		75%	75%	

Laboratory Control Sample Assessment	LCSID (Y or NJ)?	Y
Count Date:	LCS53324	47102020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049	24.049
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.506	0.509
Target Conc. (pCi/L, g, F):	4.752	4.723
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	5.519	4.383
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.820	0.711
Numerical Performance Indicator:	1.83	-0.93
Percent Recovery:	116.14%	92.81%
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	LCSID (Y or NJ)?	Y
Sample I.D.:	LCS53324	47102020
Duplicate Sample I.D.:	LCS53324	47102020
Sample Result (pCi/L, g, F):	5.519	5.519
Sample Result Counting Uncertainty (pCi/L, g, F):	0.820	0.820
Sample Duplicate Result (pCi/L, g, F):	4.383	4.383
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.711	0.711
Are sample and/or duplicate results below RL?	NO	NO
Duplicate Numerical Performance Indicator:	2.051	2.051
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	22.34%	22.34%
Duplicate Status vs Numerical Indicator:	N/A	N/A
Duplicate Status vs RPD:	Pass	Pass
% RPD Limit:	25%	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 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): 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:

4/10/2020

KLB
4-10-2020

Quality Control Sample Performance Assessment



Analyt Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/9/2020
Worklist: 53324
Matrix: DW

Method Blank Assessment	
MB Sample ID	1894734
MB Concentration:	0.103
MB Counting Uncertainty:	0.097
MB MDC:	0.172
MB Numerical Performance Indicator:	2.07
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		
LCS#	Y or N?	N
LCS53324		LCS53324
Count Date:	4/10/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.049	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.506	
Target Conc. (pCi/L, g, F):	4.752	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	5.519	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.820	
Numerical Performance Indicator:	1.83	
Percent Recovery:	116.14%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Duplicate Sample Assessment	
Sample I.D.:	2630472015
Duplicate Sample I.D.:	2630472015DUP
Sample Result (pCi/L, g, F):	0.462
Sample Result Counting Uncertainty (pCi/L, g, F):	0.290
Sample Duplicate Result (pCi/L, g, F):	0.345
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.258
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	0.594
Duplicate RPD:	29.15%
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:

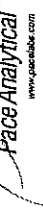
***Batch must be re-prepped due to unacceptable precision.

N/A 4/10/20

KLB
4-10-2020

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Quality Control Sample Performance Assessment



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

Test: Ra-228
Analyst: VAL
Date: 4/7/2020
Worklist: 53226
Matrix: WT

Method Blank Assessment	
MB Sample ID	1891467
MB concentration:	0.544
MB 2 Sigma CSU:	0.340
MB MDC:	0.632
MB Numerical Performance Indicator:	3.14
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	Y
Count Date:	4/16/2020
Spike I.D.:	LCSD53226
Decay Corrected Spike Concentration (pCi/mL):	19.057
Volume Used (mL):	34.469
Aliquot Volume (L, g, F):	0.10
Target Conc. (pCi/L, g, F):	0.804
Uncertainty (Calculated):	4.276
Result (pCi/L, g, F):	0.308
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	2.644
Numerical Performance Indicator:	0.706
Percent Recovery:	-4.15
Status vs Numerical Indicator:	61.83%
Status vs Recovery:	N/A
Upper % Recovery Limits:	Pass
Lower % Recovery Limits:	135%
	60%

Duplicate Sample Assessment	
Sample I.D.:	LCSD53226
Duplicate Sample I.D.:	LCSD53226
Sample Result (pCi/L, g, F):	2.644
Sample Duplicate Result (pCi/L, g, F):	0.706
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	3.287
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.811
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.171
Duplicate Percent Recoveries Duplicate RPD:	21.37%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

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

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

Comments:

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

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/9/2020
Worklist: 53276
Matrix: WT

Method Blank Assessment

MB Sample ID: 1893286
MB concentration: 0.771
MB 2 Sigma CSU: 0.384
MB MDC: 0.663
MB Numerical Performance Indicator: 3.94
MB Status vs Numerical Indicator: Fail*
MB Status vs MDC: See Comment*

LCSID (Y or N)?	Y	
	LCS53276	4/20/2020
Count Date:	19-057	19-057
Spike I.D.:	34.425	34.424
Decay Corrected Spike Concentration (pCi/mL):	0.10	0.10
Volume Used (mL):	0.802	0.807
Aliquot Volume (L, g, F):	4.291	4.266
Target Conc. (pCi/L, g, F):	0.309	0.307
Uncertainty (Calculated):	5.271	4.166
Result (pCi/L, g, F):	1.142	1.024
LCSLCSID 2 Sigma CSU (pCi/L, g, F):	1.62	-0.18
Numerical Performance Indicator:	122.84%	97.66%
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.: LCS53276
Duplicate Sample I.D.: LCS53276
Sample Result (pCi/L, g, F): 5.271
Sample Result 2 Sigma CSU (pCi/L, g, F): 1.142
Sample Duplicate Result (pCi/L, g, F): 4.166
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F): 1.024
Are sample and/or duplicate results below RL? NO
Duplicate Numerical Performance Indicator: 1.413
(Based on the LCS/LCSID Percent Recoveries) Duplicate RPD: 22.85%
Duplicate Status vs Numerical Indicator: Pass
Duplicate Status vs RPD: Pass
% RPD Limit: 36%

Enter Duplicate sample IDs if other than LCS/LCSID in the space below.

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

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

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

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Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/9/2020
Worklist: 53278
Matrix: WT



Method Blank Assessment	
MB Sample ID	1893295
MB concentration:	0.258
MB 2 Sigma CSU:	0.334
MB MDC:	0.711
MB Numerical Performance Indicator:	1.51
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS53278	Y
Count Date:	4/21/2020	LCS53278
Spike I.D.:	19-057	4/21/2020
Decay Corrected Spike Concentration (pCi/mL):	34.414	19-057
Volume Used (mL):	0.10	34.414
Aliquot Volume (L, g, F):	0.809	0.10
Target Conc. (pCi/L, g, F):	4.284	0.809
Uncertainty (Calculated):	0.308	4.255
Result (pCi/L, g, F):	3.658	0.306
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.896	3.387
Numerical Performance Indicator:	-1.30	0.852
Percent Recovery:	85.36%	-1.88
Status vs Numerical Indicator:	N/A	79.61%
Upper % Recovery Limits:	Pass	N/A
Lower % Recovery Limits:	135%	Pass
	60%	60%

Duplicate Sample Assessment	
Sample I.D.:	LCS53278
Duplicate Sample I.D.:	LCS53278
Sample Result (pCi/L, g, F):	3.658
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.896
Sample Duplicate Result (pCi/L, g, F):	3.387
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.852
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	0.429
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	6.99%
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): 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 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-228
Analyst: VAL
Date: 4/3/2020
Worklist: 53205
Matrix: WT



Method Blank Assessment	
MB Sample ID	1890903
MB concentration:	0.720
MB 2 Sigma CSU:	0.398
MB MDC:	0.719
MB Numerical Performance Indicator:	3.54
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD	Y
Count Date:	LCSD53205	4/15/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.481	34.481
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.810	0.810
Target Conc. (pCi/L, g, F):	4.303	4.258
Uncertainty (Calculated):	0.310	0.307
Result (pCi/L, g, F):	3.571	3.944
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	0.873	0.923
Numerical Performance Indicator:	-1.55	-0.63
Percent Recovery:	83.00%	92.64%
Status vs Numerical Indicator:	N/A	N/A
Upper % Recovery Limits:	135%	Pass
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCSD53205
Duplicate Sample I.D.:	LCSD53205
Sample Result (pCi/L, g, F):	3.571
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.873
Sample Duplicate Result (pCi/L, g, F):	3.944
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.923
Are sample and/or duplicate results below RL?:	NO
Duplicate Numerical Performance Indicator:	-0.575
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	10.98%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

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

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

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

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Quality Control Sample Performance Assessment

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



Test: Ra-228
 Analyst: VAL
 Date: 4/13/2020
 Worklist: 53325
 Matrix: WT

Method Blank Assessment	
MB Sample ID	1894737
MB concentration:	0.423
MB 2 Sigma CSU:	0.298
MB MDC:	0.570
MB Numerical Performance Indicator:	2.78
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSID (Y or N)?	Y
LCS53325	4/22/2020
Count Date:	19-057
Spike I.D.:	34.403
Decay Corrected Spike Concentration (pCi/mL):	0.10
Volume Used (mL):	0.816
Aliquot Volume (L, g, F):	4.216
Target Conc. (pCi/L, g, F):	0.304
Uncertainty (Calculated):	3.033
Result (pCi/L, g, F):	0.896
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.760
Numerical Performance Indicator:	-1.13
Percent Recovery:	87.03%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	135%
Lower % Recovery Limits:	60%

Duplicate Sample Assessment	
Sample I.D.:	LCS53325
Duplicate Sample I.D.:	LCS53325
Sample Result (pCi/L, g, F):	3.669
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.896
Sample Duplicate Result (pCi/L, g, F):	3.033
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.760
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	1.061
Duplicate Status vs Numerical Indicator:	18.92%
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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 4/13/2020
 4/23/2020

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

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/3/2020
Worklist: 53205
Matrix: WT



Method Blank Assessment	
MB Sample ID	1890903
MB concentration:	0.720
MB 2 Sigma CSU:	0.398
MB MDC:	0.719
MB Numerical Performance Indicator:	3.54
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment		LCSD (Y or N)?	Y
Count Date:	4/15/2020	LCSD53205	4/15/2020
Spike I.D.:	19-057		19-057
Decay Corrected Spike Concentration (pCi/mL):	34.481		34.481
Volume Used (mL):	0.10		0.10
Aliquot Volume (L, g, F):	0.810		0.810
Target Conc. (pCi/L, g, F):	4.303		4.258
Uncertainty (Calculated):	0.310		0.307
Result (pCi/L, g, F):	3.571		3.944
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	0.873		0.923
Numerical Performance Indicator:	-1.55		-0.63
Percent Recovery:	83.00%		92.64%
Status vs Numerical Indicator:	N/A		N/A
Upper % Recovery Limits:	135%		Pass
Lower % Recovery Limits:	60%		60%

Duplicate Sample Assessment		LCSD (Y or N)?	Y
Sample I.D.:	LCS53205		
Duplicate Sample I.D.:	LCS53205		
Sample Result (pCi/L, g, F):	3.571		
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.873		
Sample Duplicate Result (pCi/L, g, F):	3.944		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.923		
Are sample and/or duplicate results below RL?:	NO		
Duplicate Numerical Performance Indicator:	-0.575		
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	10.98%		
Duplicate Status vs Numerical Indicator:	Pass		
Duplicate Status vs RPD:	Pass		
% RPD Limit:	36%		

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

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

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

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July 14, 2020

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

RE: Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between June 18, 2020 and June 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-2 NON ROUTINE RADs
Pace Project No.: 92482645

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

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SAMPLE SUMMARY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92482645001	MW-21D	Water	06/17/20 09:30	06/18/20 10:37
92482645002	MW-33	Water	06/17/20 16:34	06/18/20 10:37
92482645003	MW-35	Water	06/18/20 11:52	06/19/20 13:10
92482645004	FB-02	Water	06/18/20 17:50	06/19/20 13:10
92482645005	MW-34D	Water	06/18/20 18:05	06/19/20 13:10
92482645006	MW-36D	Water	06/18/20 10:05	06/19/20 13:10
92482645007	MW-37D	Water	06/18/20 13:15	06/19/20 13:10
92482645008	MW-37D, FILTERED	Water	06/18/20 13:30	06/19/20 13:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92482645001	MW-21D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645002	MW-33	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645003	MW-35	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645004	FB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645005	MW-34D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645006	MW-36D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645007	MW-37D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645008	MW-37D, FILTERED	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482645001	MW-21D					
EPA 9315	Radium-226	0.157 ± 0.303 (0.697) C:91% T:NA	pCi/L		07/08/20 08:42	
EPA 9320	Radium-228	0.534 ± 0.534 (1.11) C:57% T:81%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	0.691 ± 0.837 (1.81)	pCi/L		07/09/20 09:57	
92482645002	MW-33					
EPA 9315	Radium-226	0.881 ± 0.385 (0.425) C:96% T:NA	pCi/L		07/08/20 08:42	
EPA 9320	Radium-228	0.544 ± 0.590 (1.23) C:58% T:74%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.43 ± 0.975 (1.66)	pCi/L		07/09/20 09:57	
92482645003	MW-35					
EPA 9315	Radium-226	0.386 ± 0.283 (0.478) C:96% T:NA	pCi/L		07/08/20 08:42	
EPA 9320	Radium-228	1.63 ± 0.621 (0.957) C:69% T:75%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	2.02 ± 0.904 (1.44)	pCi/L		07/09/20 09:57	
92482645004	FB-02					
EPA 9315	Radium-226	0.221 ± 0.237 (0.462) C:89% T:NA	pCi/L		07/08/20 07:10	
EPA 9320	Radium-228	0.250 ± 0.450 (0.984) C:65% T:76%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	0.471 ± 0.687 (1.45)	pCi/L		07/09/20 09:57	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482645005	MW-34D					
EPA 9315	Radium-226	0.401 ± 0.261 (0.367) C:98% T:NA	pCi/L		07/08/20 07:11	
EPA 9320	Radium-228	0.963 ± 0.538 (0.984) C:65% T:78%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.36 ± 0.799 (1.35)	pCi/L		07/09/20 09:57	
92482645006	MW-36D					
EPA 9315	Radium-226	0.177 ± 0.258 (0.565) C:93% T:NA	pCi/L		07/08/20 07:12	
EPA 9320	Radium-228	1.67 ± 0.647 (1.02) C:64% T:81%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.85 ± 0.905 (1.59)	pCi/L		07/09/20 09:57	
92482645007	MW-37D					
EPA 9315	Radium-226	0.709 ± 0.350 (0.425) C:84% T:NA	pCi/L		07/08/20 07:13	
EPA 9320	Radium-228	1.08 ± 0.548 (0.962) C:63% T:79%	pCi/L		07/06/20 16:03	
Total Radium Calculation	Total Radium	1.79 ± 0.898 (1.39)	pCi/L		07/09/20 09:57	
92482645008	MW-37D, FILTERED					
EPA 9315	Radium-226	0.246 ± 0.244 (0.467) C:90% T:NA	pCi/L		07/08/20 07:12	
EPA 9320	Radium-228	0.437 ± 0.448 (0.929) C:64% T:79%	pCi/L		07/06/20 16:03	
Total Radium Calculation	Total Radium	0.683 ± 0.692 (1.40)	pCi/L		07/09/20 09:57	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-21D **Lab ID: 92482645001** Collected: 06/17/20 09:30 Received: 06/18/20 10:37 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	0.157 ± 0.303 (0.697) C:91% T:NA	pCi/L	07/08/20 08:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.534 ± 0.534 (1.11) C:57% T:81%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.691 ± 0.837 (1.81)	pCi/L	07/09/20 09:57	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-33 **Lab ID: 92482645002** Collected: 06/17/20 16:34 Received: 06/18/20 10:37 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	0.881 ± 0.385 (0.425) C:96% T:NA	pCi/L	07/08/20 08:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.544 ± 0.590 (1.23) C:58% T:74%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.43 ± 0.975 (1.66)	pCi/L	07/09/20 09:57	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-35 **Lab ID: 92482645003** Collected: 06/18/20 11:52 Received: 06/19/20 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	0.386 ± 0.283 (0.478) C:96% T:NA	pCi/L	07/08/20 08:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.63 ± 0.621 (0.957) C:69% T:75%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.02 ± 0.904 (1.44)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: FB-02 **Lab ID: 92482645004** Collected: 06/18/20 17:50 Received: 06/19/20 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	0.221 ± 0.237 (0.462) C:89% T:NA	pCi/L	07/08/20 07:10	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.250 ± 0.450 (0.984) C:65% T:76%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.471 ± 0.687 (1.45)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-34D Lab ID: 92482645005 Collected: 06/18/20 18:05 Received: 06/19/20 13:10 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.401 ± 0.261 (0.367) C:98% T:NA	pCi/L	07/08/20 07:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.963 ± 0.538 (0.984) C:65% T:78%	pCi/L	07/06/20 16:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.36 ± 0.799 (1.35)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-36D Lab ID: 92482645006 Collected: 06/18/20 10:05 Received: 06/19/20 13:10 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.177 ± 0.258 (0.565) C:93% T:NA	pCi/L	07/08/20 07:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.67 ± 0.647 (1.02) C:64% T:81%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.85 ± 0.905 (1.59)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-37D Lab ID: 92482645007 Collected: 06/18/20 13:15 Received: 06/19/20 13:10 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.709 ± 0.350 (0.425) C:84% T:NA	pCi/L	07/08/20 07:13	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.08 ± 0.548 (0.962) C:63% T:79%	pCi/L	07/06/20 16:03	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.79 ± 0.898 (1.39)	pCi/L	07/09/20 09:57	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-37D, FILTERED **Lab ID: 92482645008** Collected: 06/18/20 13:30 Received: 06/19/20 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	0.246 ± 0.244 (0.467) C:90% T:NA	pCi/L	07/08/20 07:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.437 ± 0.448 (0.929) C:64% T:79%	pCi/L	07/06/20 16:03	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.683 ± 0.692 (1.40)	pCi/L	07/09/20 09:57	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

QC Batch:	403006	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

METHOD BLANK: 1950655 Matrix: Water

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0758 ± 0.123 (0.256) C:97% T:NA	pCi/L	07/07/20 19:54	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

QC Batch:	402596	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

METHOD BLANK:	1948602	Matrix:	Water
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Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.856 ± 0.506 (0.940) C:63% T:80%	pCi/L	07/06/20 16:00	

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

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QUALIFIERS

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

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-2 NON ROUTINE RAD5
Pace Project No.: 92482645

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482645001	MW-21D	EPA 9315	403006		
92482645002	MW-33	EPA 9315	403006		
92482645003	MW-35	EPA 9315	403006		
92482645004	FB-02	EPA 9315	403006		
92482645005	MW-34D	EPA 9315	403006		
92482645006	MW-36D	EPA 9315	403006		
92482645007	MW-37D	EPA 9315	403006		
92482645008	MW-37D, FILTERED	EPA 9315	403006		
92482645001	MW-21D	EPA 9320	402596		
92482645002	MW-33	EPA 9320	402596		
92482645003	MW-35	EPA 9320	402596		
92482645004	FB-02	EPA 9320	402596		
92482645005	MW-34D	EPA 9320	402596		
92482645006	MW-36D	EPA 9320	402596		
92482645007	MW-37D	EPA 9320	402596		
92482645008	MW-37D, FILTERED	EPA 9320	402596		
92482645001	MW-21D	Total Radium Calculation	404343		
92482645002	MW-33	Total Radium Calculation	404343		
92482645003	MW-35	Total Radium Calculation	404343		
92482645004	FB-02	Total Radium Calculation	404343		
92482645005	MW-34D	Total Radium Calculation	404343		
92482645006	MW-36D	Total Radium Calculation	404343		
92482645007	MW-37D	Total Radium Calculation	404343		
92482645008	MW-37D, FILTERED	Total Radium Calculation	404343		

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

W0# : 92482645
 92482645

Section A Required Client Information Company: GA Power Address: Atlanta GA Email To: SCS Contacts Phone: Fax Requested Due Date/TIME: 5 Day		Section B Required Project Information Request to: SCS Contacts Copy to: Geosyntec Contacts Purchase Order No. Project Name: Plant Hammond AP-2 Non-Routine Project Number: GW65818		Section C Invoice Information Address: Southern Co Company Name: Kevin Herring Rate Date: Kevin Herring Requested By: Kevin Herring Order Number: 619120	
REGULATORY AGENCY NPODES GROUND WATER UST RCRA OTHER <input checked="" type="checkbox"/>		SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Shawn Lin SIGNATURE of SAMPLER: <i>Shawn Lin</i> DATE Signed (MM/DD/YY): 6/17/2020		REGULATORY AGENCY NPODES GROUND WATER UST RCRA OTHER <input checked="" type="checkbox"/> Site Location STATE: GA	

ITEM #	Section D Required Client Headers MATERIAL CODE VALID MATRIX CODES WATER WASTE SLURRY SOLID OTHER	MATERIAL CODE	SCORE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₅ Methanol Other	Preservatives	Requested Analysis Filtered (Y/N)						Residual Chlorine (Y/N)	pH = <i>h-47</i>	Pace Project No./ Lab I.D.					
														Chloride	Fluoride	Sulfate	IDS	Metals*	PAD 226/228				Alkalinity	Bicarbonate	Sulfide		
1		MMW-21D		WT	G	6/17/2020	9:30			18	7	3	3	3	1	X	X	X	X	X	X						
2		MMW-33		WT	G																						
3		MMW-24D		WT	G																						
4		MMW-35		WT	G																						
5		MMW-36D		WT	G																						
6		MMW-37D		WT	G																						
7		EB-02		WT	G																						
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLER CONDITIONS	
These radi dry wells. Shown through any wells not sampled and note when the last sample for the extent has been taken.		Shawn Lin	Geosyntec	6/17/2020	1715	Lead Rubber / PCB	6/17/2020	1715	Shawn Lin	Geosyntec	6/17/2020	1715	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)
		Shawn Lin	Geosyntec	6/17/2020	1845	Mobil Lubricants Division	6/17/2020	1845	Shawn Lin	Geosyntec	6/17/2020	1845			
		Shawn Lin	Geosyntec	6/17/2020	1037	Lead Rubber / PCB	6/17/2020	1037	Shawn Lin	Geosyntec	6/17/2020	1037			

*Standard Note: By signing this form, you are accepting Pace's NE 1-30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.
 F-411-Q-020Rev-07, 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

PH: KLH1 Due Date: 07/10/20

W0#: 92482645

Section A Required Client Information

Company GA Power Address Atlanta, GA

Section B Requested Project Information

Request to SCS Contacts Copy To Geosynthetic Contacts Project Name Plant Hammond AP-2 Non-Routine Project Number GW6581B

Section C Invoice Information

Atlanta Southern Co. Address 1400 Peachtree Street, N.E. Atlanta, GA 30309

REGULATORY AGENCY NPDES GROUND WATER DRINKING WATER

Site Location GA State: GA

Section D Valid Matrix Codes

- Matrix Code list: L, M, N, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UU, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

Table with columns: ITEM #, MATRIX CODE, SAMPLE TYPE, DATE, TIME, DATE, TIME, SAMPLE TEMP AT COLLECTION, # OF CONTAINERS, Preservatives, Analysis Test, Residual Chlorine (Y/N), Pace Project No/ Lab I.D.

Table with columns: ADDITIONAL COMMENTS, RELINQUISHED BY/AFFILIATION, DATE, TIME, ACCEPTED BY/AFFILIATION, DATE, TIME, SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Chad Russo

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 7/7/2020
Worklist: 54859
Matrix: DW

Method Blank Assessment	
MB Sample ID	1950655
MB concentration:	0.076
MB Counting Uncertainty:	0.122
MB MDC:	0.256
MB Numerical Performance Indicator:	1.21
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS54859	Y
Count Date:	7/8/2020	7/8/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.046	24.046
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.503	0.501
Target Conc. (pCi/L, g, F):	4.784	4.804
Uncertainty (Calculated):	0.057	0.058
Result (pCi/L, g, F):	4.691	3.943
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.717	0.684
Numerical Performance Indicator:	-0.25	-2.42
Percent Recovery:	98.05%	82.08%
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	LCS54859	Y
Sample I.D.:	LCS54859	7/8/2020
Duplicate Sample I.D.:	LCS54859	19-033
Sample Result (pCi/L, g, F):	4.691	4.804
Sample Duplicate Result (pCi/L, g, F):	0.717	0.501
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	3.943	4.804
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.684	0.684
Are sample and/or duplicate results below RL?	NO	NO
Duplicate Numerical Performance Indicator:	1.468	1.468
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	17.74%	17.74%
Duplicate Status vs Numerical Indicator:	N/A	N/A
Duplicate Status vs RPD:	Pass	Pass
% RPD Limit:	25%	25%

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

Comments:

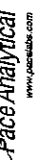
Handwritten signature/initials

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:		
Sample Matrix Spike 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.:
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:

Handwritten signature/initials

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 7/7/2020
Worklist: 54859
Matrix: DW

Method Blank Assessment	
MB Sample ID	1950655
MB concentration:	0.076
MB Counting Uncertainty:	0.122
MB MDC:	0.256
MB Numerical Performance Indicator:	1.21
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	7/8/2020
Spike I.D.:	LCS54859
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):	0.503
Uncertainty (Calculated):	4.784
Result (pCi/L, g, F):	0.057
Numerical Performance Indicator:	4.691
Percent Recovery:	0.717
Status vs Numerical Indicator:	-0.25
Upper % Recovery Limits:	98.05%
Lower % Recovery Limits:	N/A
	Pass
	125%
	75%

Duplicate Sample Assessment	
Sample I.D.:	92482796001
Duplicate Sample I.D.:	92482796001DUP
Sample Result (pCi/L, g, F):	0.470
Sample Duplicate Result (pCi/L, g, F):	0.287
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.046
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.126
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	2.650
Duplicate RPD:	164.40%
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:

#DIV/0!

batch must be re-prepped due to unacceptable precision

7/8/2020
7/18/2020
54859

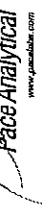
Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date:</p> <p>Sample I.D.:</p> <p>Sample MS I.D.:</p> <p>Sample MSD I.D.:</p> <p>Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL):</p> <p>Spike Volume Used in MS (mL):</p> <p>Spike Volume Used in MSD (mL):</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>Matrix Spike Duplicate Result 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>Sample Matrix Spike Duplicate Result:</p> <p>Sample Matrix Spike Duplicate Result 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>

JL 7/8/20

DW 7.8.20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 7/1/2020
Worklist: 54819
Matrix: WT

Method Blank Assessment	
MB Sample ID	1948602
MB concentration:	0.856
MB 2 Sigma CSU:	0.506
MB MDC:	0.940
MB Numerical Performance Indicator:	3.31
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS54819	LCS54819
Count Date:	7/6/2020	7/6/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	33.559	33.559
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.810	0.820
Target Conc. (pCi/L, g, F):	4.142	4.093
Uncertainty (Calculated):	0.298	0.295
Result (pCi/L, g, F):	4.306	4.401
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.098	1.097
Numerical Performance Indicator:	0.28	0.53
Percent Recovery:	103.99%	107.53%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS54819
Duplicate Sample I.D.:	LCS54819
Sample Result (pCi/L, g, F):	4.306
Sample Duplicate Result (pCi/L, g, F):	1.098
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	4.401
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.097
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.119
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	3.36%
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.:
Sample Matrix Spike Result:
Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

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

Comments:

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

July 01, 2020

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

RE: Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between June 18, 2020 and June 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

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

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

Sincerely,



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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

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-2 NON ROUTINE

Pace Project No.: 92482649

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92482649001	MW-21D	Water	06/17/20 09:30	06/18/20 10:37
92482649002	MW-33	Water	06/17/20 16:34	06/18/20 10:37
92482649003	MW-35	Water	06/18/20 11:52	06/19/20 13:10
92482649004	FB-02	Water	06/18/20 17:50	06/19/20 13:10
92482649005	MW-34D	Water	06/18/20 18:05	06/19/20 13:10
92482649006	MW-36D	Water	06/18/20 10:05	06/19/20 13:10
92482649007	MW-37D	Water	06/18/20 13:15	06/19/20 13:10
92482649008	MW-37D, FILTERED	Water	06/18/20 13:30	06/19/20 13:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92482649001	MW-21D	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649002	MW-33	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649003	MW-35	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649004	FB-02	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649005	MW-34D	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649006	MW-36D	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649007	MW-37D	EPA 6010D	DRB	6

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649008	MW-37D, FILTERED	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	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-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482649001	MW-21D					
	pH	6.47	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	434	mg/L	10.0	06/23/20 12:37	
EPA 6010D	Iron	22.3	mg/L	0.040	06/22/20 16:02	
EPA 6010D	Magnesium	71.7	mg/L	0.050	06/22/20 16:02	
EPA 6010D	Manganese	1.3	mg/L	0.040	06/22/20 16:02	
EPA 6010D	Potassium	1.1	mg/L	0.20	06/22/20 16:02	
EPA 6010D	Sodium	15.8	mg/L	1.0	06/22/20 16:02	
EPA 6020B	Barium	0.054	mg/L	0.010	06/19/20 20:18	
EPA 6020B	Boron	5.8	mg/L	0.10	06/19/20 20:18	
EPA 6020B	Chromium	0.00057J	mg/L	0.010	06/19/20 20:18	
EPA 6020B	Lithium	0.023J	mg/L	0.030	06/19/20 20:18	
EPA 6020B	Molybdenum	0.019	mg/L	0.010	06/19/20 20:18	
SM 2450C-2011	Total Dissolved Solids	2100	mg/L	10.0	06/19/20 18:08	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	41.2	mg/L	5.0	06/29/20 18:41	
SM 2320B-2011	Alkalinity, Total as CaCO3	41.2	mg/L	5.0	06/29/20 18:41	
EPA 300.0 Rev 2.1 1993	Chloride	223	mg/L	18.0	06/25/20 10:16	
EPA 300.0 Rev 2.1 1993	Sulfate	901	mg/L	18.0	06/25/20 10:16	
92482649002	MW-33					
	pH	4.36	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	561	mg/L	10.0	06/23/20 12:41	
EPA 6010D	Iron	1.2	mg/L	0.040	06/22/20 16:06	
EPA 6010D	Magnesium	55.9	mg/L	0.050	06/22/20 16:06	
EPA 6010D	Manganese	4.5	mg/L	0.040	06/22/20 16:06	
EPA 6010D	Potassium	11.1	mg/L	0.20	06/22/20 16:06	
EPA 6010D	Sodium	10.8	mg/L	1.0	06/22/20 16:06	
EPA 6020B	Arsenic	0.0031J	mg/L	0.0050	06/19/20 20:24	
EPA 6020B	Barium	0.024	mg/L	0.010	06/19/20 20:24	
EPA 6020B	Beryllium	0.00099J	mg/L	0.0030	06/19/20 20:24	
EPA 6020B	Boron	10.3	mg/L	1.0	06/23/20 12:44	
EPA 6020B	Cadmium	0.00021J	mg/L	0.0025	06/19/20 20:24	
EPA 6020B	Cobalt	0.053	mg/L	0.0050	06/19/20 20:24	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	06/19/20 20:24	
EPA 6020B	Lithium	0.00097J	mg/L	0.030	06/19/20 20:24	
EPA 6020B	Selenium	0.014	mg/L	0.010	06/19/20 20:24	
EPA 6020B	Thallium	0.00028J	mg/L	0.0010	06/19/20 20:24	
SM 2450C-2011	Total Dissolved Solids	2540	mg/L	10.0	06/19/20 18:09	
EPA 300.0 Rev 2.1 1993	Chloride	250	mg/L	24.0	06/25/20 10:31	
EPA 300.0 Rev 2.1 1993	Fluoride	0.25	mg/L	0.10	06/25/20 06:25	
EPA 300.0 Rev 2.1 1993	Sulfate	1210	mg/L	24.0	06/25/20 10:31	
92482649003	MW-35					
	pH	5.46	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	517	mg/L	10.0	06/23/20 12:46	M6
EPA 6010D	Iron	2.4	mg/L	0.040	06/22/20 17:10	
EPA 6010D	Magnesium	71.5	mg/L	0.050	06/22/20 17:10	M1
EPA 6010D	Manganese	10.6	mg/L	0.040	06/22/20 17:10	M1
EPA 6010D	Potassium	8.3	mg/L	0.20	06/22/20 17:10	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482649003	MW-35					
EPA 6010D	Sodium	11.5	mg/L	1.0	06/22/20 17:10	
EPA 6020B	Arsenic	0.0050J	mg/L	0.0050	06/23/20 13:50	
EPA 6020B	Barium	0.029	mg/L	0.010	06/23/20 13:50	
EPA 6020B	Beryllium	0.00032J	mg/L	0.0030	06/23/20 13:50	
EPA 6020B	Boron	11.9	mg/L	1.0	06/23/20 16:53	
EPA 6020B	Cadmium	0.00053J	mg/L	0.0025	06/23/20 13:50	
EPA 6020B	Cobalt	0.091	mg/L	0.0050	06/23/20 13:50	
EPA 6020B	Lead	0.00016J	mg/L	0.0050	06/23/20 13:50	
EPA 6020B	Lithium	0.0046J	mg/L	0.030	06/23/20 13:50	
EPA 6020B	Selenium	0.014	mg/L	0.010	06/23/20 13:50	
EPA 6020B	Thallium	0.00013J	mg/L	0.0010	06/23/20 13:50	
SM 2450C-2011	Total Dissolved Solids	2310	mg/L	10.0	06/22/20 17:35	
EPA 300.0 Rev 2.1 1993	Chloride	229	mg/L	23.0	06/25/20 10:45	
EPA 300.0 Rev 2.1 1993	Fluoride	0.053J	mg/L	0.10	06/25/20 06:39	
EPA 300.0 Rev 2.1 1993	Sulfate	1160	mg/L	23.0	06/25/20 10:45	
92482649004	FB-02					
EPA 6010D	Calcium	0.16J	mg/L	1.0	06/22/20 17:26	
EPA 6010D	Magnesium	0.026J	mg/L	0.050	06/22/20 17:26	B
EPA 6020B	Boron	0.041J	mg/L	0.10	06/23/20 13:55	
92482649005	MW-34D					
	pH	7.35	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	584	mg/L	10.0	06/23/20 12:58	
EPA 6010D	Iron	1.8	mg/L	0.040	06/22/20 17:31	
EPA 6010D	Magnesium	59.3	mg/L	0.050	06/22/20 17:31	
EPA 6010D	Manganese	4.7	mg/L	0.040	06/22/20 17:31	
EPA 6010D	Potassium	10.8	mg/L	0.20	06/22/20 17:31	
EPA 6010D	Sodium	16.0	mg/L	1.0	06/22/20 17:31	
EPA 6020B	Arsenic	0.0032J	mg/L	0.0050	06/23/20 14:22	
EPA 6020B	Barium	0.044	mg/L	0.010	06/23/20 14:22	
EPA 6020B	Beryllium	0.00015J	mg/L	0.0030	06/23/20 14:22	
EPA 6020B	Boron	9.4	mg/L	0.10	06/23/20 14:22	
EPA 6020B	Chromium	0.0059J	mg/L	0.010	06/23/20 14:22	
EPA 6020B	Cobalt	0.011	mg/L	0.0050	06/23/20 14:22	
EPA 6020B	Lead	0.00087J	mg/L	0.0050	06/23/20 14:22	
EPA 6020B	Lithium	0.0021J	mg/L	0.030	06/23/20 14:22	
EPA 6020B	Selenium	0.0025J	mg/L	0.010	06/23/20 14:22	
EPA 6020B	Thallium	0.00015J	mg/L	0.0010	06/23/20 14:22	
SM 2450C-2011	Total Dissolved Solids	2320	mg/L	10.0	06/22/20 17:36	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	96.5	mg/L	5.0	06/30/20 15:52	
SM 2320B-2011	Alkalinity, Total as CaCO3	96.5	mg/L	5.0	06/30/20 15:52	
EPA 300.0 Rev 2.1 1993	Chloride	259	mg/L	22.0	06/26/20 08:16	
EPA 300.0 Rev 2.1 1993	Fluoride	0.082J	mg/L	0.10	06/25/20 22:36	
EPA 300.0 Rev 2.1 1993	Sulfate	1100	mg/L	22.0	06/26/20 08:16	
92482649006	MW-36D					
	pH	6.45	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	65.2	mg/L	1.0	06/22/20 17:43	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482649006	MW-36D					
EPA 6010D	Iron	0.58	mg/L	0.040	06/22/20 17:43	
EPA 6010D	Magnesium	7.7	mg/L	0.050	06/22/20 17:43	
EPA 6010D	Manganese	0.055	mg/L	0.040	06/22/20 17:43	
EPA 6010D	Potassium	0.47	mg/L	0.20	06/22/20 17:43	
EPA 6010D	Sodium	7.2	mg/L	1.0	06/22/20 17:43	
EPA 6020B	Arsenic	0.00046J	mg/L	0.0050	06/23/20 14:28	
EPA 6020B	Barium	0.15	mg/L	0.010	06/23/20 14:28	
EPA 6020B	Boron	0.067J	mg/L	0.10	06/23/20 14:28	
EPA 6020B	Chromium	0.00045J	mg/L	0.010	06/23/20 14:28	
EPA 6020B	Lithium	0.0087J	mg/L	0.030	06/23/20 14:28	
SM 2450C-2011	Total Dissolved Solids	237	mg/L	10.0	06/22/20 17:37	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	164	mg/L	5.0	06/30/20 16:02	
SM 2320B-2011	Alkalinity, Total as CaCO3	164	mg/L	5.0	06/30/20 16:02	
EPA 300.0 Rev 2.1 1993	Chloride	2.3	mg/L	1.0	06/25/20 22:50	
EPA 300.0 Rev 2.1 1993	Fluoride	0.053J	mg/L	0.10	06/25/20 22:50	
EPA 300.0 Rev 2.1 1993	Sulfate	50.5	mg/L	1.0	06/25/20 22:50	
92482649007	MW-37D					
	pH	7.78	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	165	mg/L	1.0	06/22/20 17:48	
EPA 6010D	Iron	3.4	mg/L	0.040	06/22/20 17:48	
EPA 6010D	Magnesium	30.5	mg/L	0.050	06/22/20 17:48	
EPA 6010D	Manganese	0.15	mg/L	0.040	06/22/20 17:48	
EPA 6010D	Potassium	2.9	mg/L	0.20	06/22/20 17:48	
EPA 6010D	Sodium	59.6	mg/L	1.0	06/22/20 17:48	
EPA 6020B	Arsenic	0.0021J	mg/L	0.0050	06/23/20 14:33	
EPA 6020B	Barium	0.19	mg/L	0.010	06/23/20 14:33	
EPA 6020B	Beryllium	0.00012J	mg/L	0.0030	06/23/20 14:33	
EPA 6020B	Boron	0.14	mg/L	0.10	06/23/20 14:33	
EPA 6020B	Chromium	0.0048J	mg/L	0.010	06/23/20 14:33	
EPA 6020B	Cobalt	0.0015J	mg/L	0.0050	06/23/20 14:33	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	06/23/20 14:33	
EPA 6020B	Lithium	0.038J	mg/L	0.030	06/23/20 14:33	
EPA 6020B	Molybdenum	0.023	mg/L	0.010	06/23/20 14:33	
SM 2450C-2011	Total Dissolved Solids	888	mg/L	10.0	06/22/20 17:37	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	116	mg/L	5.0	06/30/20 16:22	
SM 2320B-2011	Alkalinity, Total as CaCO3	116	mg/L	5.0	06/30/20 16:22	
EPA 300.0 Rev 2.1 1993	Chloride	151	mg/L	6.0	06/26/20 08:31	
EPA 300.0 Rev 2.1 1993	Fluoride	0.10	mg/L	0.10	06/25/20 23:05	
EPA 300.0 Rev 2.1 1993	Sulfate	286	mg/L	6.0	06/26/20 08:31	
92482649008	MW-37D, FILTERED					
	pH	7.78	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	168	mg/L	1.0	06/22/20 17:52	
EPA 6010D	Iron	0.087	mg/L	0.040	06/22/20 17:52	
EPA 6010D	Magnesium	30.6	mg/L	0.050	06/22/20 17:52	
EPA 6010D	Manganese	0.12	mg/L	0.040	06/22/20 17:52	
EPA 6010D	Potassium	2.0	mg/L	0.20	06/22/20 17:52	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482649008	MW-37D, FILTERED					
EPA 6010D	Sodium	60.9	mg/L	1.0	06/22/20 17:52	
EPA 6020B	Arsenic	0.0016J	mg/L	0.0050	06/23/20 14:39	
EPA 6020B	Barium	0.17	mg/L	0.010	06/23/20 14:39	
EPA 6020B	Boron	0.14	mg/L	0.10	06/23/20 14:39	
EPA 6020B	Chromium	0.00040J	mg/L	0.010	06/23/20 14:39	
EPA 6020B	Lead	0.000051J	mg/L	0.0050	06/23/20 14:39	
EPA 6020B	Lithium	0.036J	mg/L	0.030	06/23/20 14:39	
EPA 6020B	Molybdenum	0.022	mg/L	0.010	06/23/20 14:39	
SM 2450C-2011	Total Dissolved Solids	879	mg/L	10.0	06/22/20 17:38	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	116	mg/L	5.0	06/30/20 16:32	
SM 2320B-2011	Alkalinity, Total as CaCO3	116	mg/L	5.0	06/30/20 16:32	
EPA 300.0 Rev 2.1 1993	Chloride	160	mg/L	6.0	06/29/20 12:12	
EPA 300.0 Rev 2.1 1993	Fluoride	0.10	mg/L	0.10	06/27/20 15:38	
EPA 300.0 Rev 2.1 1993	Sulfate	292	mg/L	6.0	06/29/20 12:12	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
 Pace Project No.: 92482649

Sample: MW-21D **Lab ID: 92482649001** Collected: 06/17/20 09:30 Received: 06/18/20 10:37 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.47	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	434	mg/L	10.0	1.4	10	06/19/20 14:00	06/23/20 12:37	7440-70-2	
Iron	22.3	mg/L	0.040	0.015	1	06/19/20 14:00	06/22/20 16:02	7439-89-6	
Magnesium	71.7	mg/L	0.050	0.011	1	06/19/20 14:00	06/22/20 16:02	7439-95-4	
Manganese	1.3	mg/L	0.040	0.0061	1	06/19/20 14:00	06/22/20 16:02	7439-96-5	
Potassium	1.1	mg/L	0.20	0.026	1	06/19/20 14:00	06/22/20 16:02	7440-09-7	
Sodium	15.8	mg/L	1.0	0.19	1	06/19/20 14:00	06/22/20 16:02	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	06/19/20 12:30	06/19/20 20:18	7440-38-2	
Barium	0.054	mg/L	0.010	0.00049	1	06/19/20 12:30	06/19/20 20:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/19/20 12:30	06/19/20 20:18	7440-41-7	
Boron	5.8	mg/L	0.10	0.0049	1	06/19/20 12:30	06/19/20 20:18	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/19/20 12:30	06/19/20 20:18	7440-43-9	
Chromium	0.00057J	mg/L	0.010	0.00039	1	06/19/20 12:30	06/19/20 20:18	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/19/20 12:30	06/19/20 20:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	06/19/20 12:30	06/19/20 20:18	7439-92-1	
Lithium	0.023J	mg/L	0.030	0.00078	1	06/19/20 12:30	06/19/20 20:18	7439-93-2	
Molybdenum	0.019	mg/L	0.010	0.00095	1	06/19/20 12:30	06/19/20 20:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/19/20 12:30	06/19/20 20:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/19/20 12:30	06/19/20 20:18	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2100	mg/L	10.0	10.0	1		06/19/20 18:08		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	41.2	mg/L	5.0	5.0	1		06/29/20 18:41		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/29/20 18:41		
Alkalinity, Total as CaCO ₃	41.2	mg/L	5.0	5.0	1		06/29/20 18:41		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:54	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	223	mg/L	18.0	10.8	18		06/25/20 10:16	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		06/25/20 05:41	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-21D		Lab ID: 92482649001		Collected: 06/17/20 09:30	Received: 06/18/20 10:37	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Sulfate	901	mg/L	18.0	9.0	18		06/25/20 10:16	14808-79-8		

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
 Pace Project No.: 92482649

Sample: MW-33 **Lab ID: 92482649002** Collected: 06/17/20 16:34 Received: 06/18/20 10:37 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.36	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	561	mg/L	10.0	1.4	10	06/19/20 14:00	06/23/20 12:41	7440-70-2	
Iron	1.2	mg/L	0.040	0.015	1	06/19/20 14:00	06/22/20 16:06	7439-89-6	
Magnesium	55.9	mg/L	0.050	0.011	1	06/19/20 14:00	06/22/20 16:06	7439-95-4	
Manganese	4.5	mg/L	0.040	0.0061	1	06/19/20 14:00	06/22/20 16:06	7439-96-5	
Potassium	11.1	mg/L	0.20	0.026	1	06/19/20 14:00	06/22/20 16:06	7440-09-7	
Sodium	10.8	mg/L	1.0	0.19	1	06/19/20 14:00	06/22/20 16:06	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0031J	mg/L	0.0050	0.00035	1	06/19/20 12:30	06/19/20 20:24	7440-38-2	
Barium	0.024	mg/L	0.010	0.00049	1	06/19/20 12:30	06/19/20 20:24	7440-39-3	
Beryllium	0.00099J	mg/L	0.0030	0.000074	1	06/19/20 12:30	06/19/20 20:24	7440-41-7	
Boron	10.3	mg/L	1.0	0.049	10	06/19/20 12:30	06/23/20 12:44	7440-42-8	
Cadmium	0.00021J	mg/L	0.0025	0.00011	1	06/19/20 12:30	06/19/20 20:24	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	06/19/20 12:30	06/19/20 20:24	7440-47-3	
Cobalt	0.053	mg/L	0.0050	0.00030	1	06/19/20 12:30	06/19/20 20:24	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	06/19/20 12:30	06/19/20 20:24	7439-92-1	
Lithium	0.00097J	mg/L	0.030	0.00078	1	06/19/20 12:30	06/19/20 20:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/19/20 12:30	06/19/20 20:24	7439-98-7	
Selenium	0.014	mg/L	0.010	0.0013	1	06/19/20 12:30	06/19/20 20:24	7782-49-2	
Thallium	0.00028J	mg/L	0.0010	0.000052	1	06/19/20 12:30	06/19/20 20:24	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2540	mg/L	10.0	10.0	1		06/19/20 18:09		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/29/20 18:47		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/29/20 18:47		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		06/29/20 18:47		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:57	18496-25-8	M1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	250	mg/L	24.0	14.4	24		06/25/20 10:31	16887-00-6	
Fluoride	0.25	mg/L	0.10	0.050	1		06/25/20 06:25	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-33		Lab ID: 92482649002		Collected: 06/17/20 16:34	Received: 06/18/20 10:37	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1210	mg/L	24.0	12.0	24		06/25/20 10:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: MW-35		Lab ID: 92482649003		Collected: 06/18/20 11:52		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.46	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	517	mg/L	10.0	1.4	10	06/22/20 14:08	06/23/20 12:46	7440-70-2	M6
Iron	2.4	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:10	7439-89-6	
Magnesium	71.5	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:10	7439-95-4	M1
Manganese	10.6	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:10	7439-96-5	M1
Potassium	8.3	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:10	7440-09-7	
Sodium	11.5	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:10	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0050J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 13:50	7440-38-2	
Barium	0.029	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 13:50	7440-39-3	
Beryllium	0.00032J	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 13:50	7440-41-7	
Boron	11.9	mg/L	1.0	0.049	10	06/22/20 17:17	06/23/20 16:53	7440-42-8	
Cadmium	0.00053J	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 13:50	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 13:50	7440-47-3	
Cobalt	0.091	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 13:50	7440-48-4	
Lead	0.00016J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 13:50	7439-92-1	
Lithium	0.0046J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 13:50	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 13:50	7439-98-7	
Selenium	0.014	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 13:50	7782-49-2	
Thallium	0.00013J	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 13:50	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2310	mg/L	10.0	10.0	1		06/22/20 17:35		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 15:33		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 15:33		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		06/30/20 15:33		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:58	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	229	mg/L	23.0	13.8	23		06/25/20 10:45	16887-00-6	
Fluoride	0.053J	mg/L	0.10	0.050	1		06/25/20 06:39	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-35		Lab ID: 92482649003		Collected: 06/18/20 11:52	Received: 06/19/20 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1160	mg/L	23.0	11.5	23		06/25/20 10:45	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: FB-02		Lab ID: 92482649004		Collected: 06/18/20 17:50		Received: 06/19/20 13:10		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	0.16J	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:26	7440-70-2		
Iron	ND	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:26	7439-89-6		
Magnesium	0.026J	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:26	7439-95-4	B	
Manganese	ND	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:26	7439-96-5		
Potassium	ND	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:26	7440-09-7		
Sodium	ND	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:26	7440-23-5		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 13:55	7440-38-2		
Barium	ND	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 13:55	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 13:55	7440-41-7		
Boron	0.041J	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 13:55	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 13:55	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 13:55	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 13:55	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 13:55	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 13:55	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 13:55	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 13:55	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 13:55	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		06/22/20 17:35			
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/30/20 15:48			
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/30/20 15:48			
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		06/30/20 15:48			
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville								
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:59	18496-25-8		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		06/25/20 22:21	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		06/25/20 22:21	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		06/25/20 22:21	14808-79-8		

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Sample Project No.: 92482649

Sample: MW-34D		Lab ID: 92482649005		Collected: 06/18/20 18:05		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.35	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	584	mg/L	10.0	1.4	10	06/22/20 14:08	06/23/20 12:58	7440-70-2	
Iron	1.8	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:31	7439-89-6	
Magnesium	59.3	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:31	7439-95-4	
Manganese	4.7	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:31	7439-96-5	
Potassium	10.8	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:31	7440-09-7	
Sodium	16.0	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:31	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0032J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:22	7440-38-2	
Barium	0.044	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:22	7440-39-3	
Beryllium	0.00015J	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:22	7440-41-7	
Boron	9.4	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:22	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:22	7440-43-9	
Chromium	0.0059J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:22	7440-47-3	
Cobalt	0.011	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:22	7440-48-4	
Lead	0.00087J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:22	7439-92-1	
Lithium	0.0021J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:22	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:22	7439-98-7	
Selenium	0.0025J	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:22	7782-49-2	
Thallium	0.00015J	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:22	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2320	mg/L	10.0	10.0	1		06/22/20 17:36		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	96.5	mg/L	5.0	5.0	1		06/30/20 15:52		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 15:52		
Alkalinity, Total as CaCO ₃	96.5	mg/L	5.0	5.0	1		06/30/20 15:52		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:59	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	259	mg/L	22.0	13.2	22		06/26/20 08:16	16887-00-6	
Fluoride	0.082J	mg/L	0.10	0.050	1		06/25/20 22:36	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-34D		Lab ID: 92482649005		Collected: 06/18/20 18:05		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	1100	mg/L	22.0	11.0	22		06/26/20 08:16	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: MW-36D		Lab ID: 92482649006		Collected: 06/18/20 10:05		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.45	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	65.2	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:43	7440-70-2	
Iron	0.58	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:43	7439-89-6	
Magnesium	7.7	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:43	7439-95-4	
Manganese	0.055	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:43	7439-96-5	
Potassium	0.47	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:43	7440-09-7	
Sodium	7.2	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:43	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.00046J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:28	7440-38-2	
Barium	0.15	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:28	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:28	7440-41-7	
Boron	0.067J	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:28	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:28	7440-43-9	
Chromium	0.00045J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:28	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:28	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:28	7439-92-1	
Lithium	0.0087J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:28	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:28	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:28	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:28	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	237	mg/L	10.0	10.0	1		06/22/20 17:37		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	164	mg/L	5.0	5.0	1		06/30/20 16:02		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 16:02		
Alkalinity, Total as CaCO ₃	164	mg/L	5.0	5.0	1		06/30/20 16:02		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 19:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	2.3	mg/L	1.0	0.60	1		06/25/20 22:50	16887-00-6	
Fluoride	0.053J	mg/L	0.10	0.050	1		06/25/20 22:50	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-36D		Lab ID: 92482649006		Collected: 06/18/20 10:05	Received: 06/19/20 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	50.5	mg/L	1.0	0.50	1		06/25/20 22:50	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: MW-37D Lab ID: 92482649007 Collected: 06/18/20 13:15 Received: 06/19/20 13:10 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.78	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	165	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:48	7440-70-2	
Iron	3.4	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:48	7439-89-6	
Magnesium	30.5	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:48	7439-95-4	
Manganese	0.15	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:48	7439-96-5	
Potassium	2.9	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:48	7440-09-7	
Sodium	59.6	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:48	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0021J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:33	7440-38-2	
Barium	0.19	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:33	7440-39-3	
Beryllium	0.00012J	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:33	7440-41-7	
Boron	0.14	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:33	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:33	7440-43-9	
Chromium	0.0048J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:33	7440-47-3	
Cobalt	0.0015J	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:33	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:33	7439-92-1	
Lithium	0.038J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:33	7439-93-2	
Molybdenum	0.023	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:33	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:33	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:33	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	888	mg/L	10.0	10.0	1		06/22/20 17:37		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	116	mg/L	5.0	5.0	1		06/30/20 16:22		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 16:22		
Alkalinity, Total as CaCO ₃	116	mg/L	5.0	5.0	1		06/30/20 16:22		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 19:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	151	mg/L	6.0	3.6	6		06/26/20 08:31	16887-00-6	
Fluoride	0.10	mg/L	0.10	0.050	1		06/25/20 23:05	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-37D		Lab ID: 92482649007		Collected: 06/18/20 13:15	Received: 06/19/20 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	286	mg/L	6.0	3.0	6		06/26/20 08:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Sample Project No.: 92482649

Sample: MW-37D, FILTERED Lab ID: 92482649008 Collected: 06/18/20 13:30 Received: 06/19/20 13:10 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.78	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	168	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:52	7440-70-2	
Iron	0.087	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:52	7439-89-6	
Magnesium	30.6	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:52	7439-95-4	
Manganese	0.12	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:52	7439-96-5	
Potassium	2.0	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:52	7440-09-7	
Sodium	60.9	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:52	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0016J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:39	7440-38-2	
Barium	0.17	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:39	7440-41-7	
Boron	0.14	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:39	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:39	7440-43-9	
Chromium	0.00040J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:39	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:39	7440-48-4	
Lead	0.000051J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:39	7439-92-1	
Lithium	0.036J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:39	7439-93-2	
Molybdenum	0.022	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:39	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	879	mg/L	10.0	10.0	1		06/22/20 17:38		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	116	mg/L	5.0	5.0	1		06/30/20 16:32		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 16:32		
Alkalinity, Total as CaCO ₃	116	mg/L	5.0	5.0	1		06/30/20 16:32		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 19:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	160	mg/L	6.0	3.6	6		06/29/20 12:12	16887-00-6	
Fluoride	0.10	mg/L	0.10	0.050	1		06/27/20 15:38	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-37D, FILTERED Lab ID: 92482649008 Collected: 06/18/20 13:30 Received: 06/19/20 13:10 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Sulfate	292	mg/L	6.0	3.0	6		06/29/20 12:12	14808-79-8	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548539 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2918225 Matrix: Water

Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/22/20 14:53	
Iron	mg/L	ND	0.040	0.015	06/22/20 14:53	
Magnesium	mg/L	ND	0.050	0.011	06/22/20 14:53	
Manganese	mg/L	ND	0.040	0.0061	06/22/20 14:53	
Potassium	mg/L	ND	0.20	0.026	06/22/20 14:53	
Sodium	mg/L	ND	1.0	0.19	06/22/20 14:53	

LABORATORY CONTROL SAMPLE: 2918226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.99J	99	80-120	
Iron	mg/L	1	1.0	102	80-120	
Magnesium	mg/L	1	1.0	104	80-120	
Manganese	mg/L	1	0.99	99	80-120	
Potassium	mg/L	1	0.97	97	80-120	
Sodium	mg/L	1	1.1	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2918227 2918228

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Calcium	mg/L	112	1	1	110	114	-256	180	75-125	4	20 M1
Iron	mg/L	0.56	1	1	1.6	1.6	103	108	75-125	3	20
Magnesium	mg/L	10.3	1	1	11.0	11.4	74	117	75-125	4	20 M1
Manganese	mg/L	0.22	1	1	1.2	1.2	96	100	75-125	3	20
Potassium	mg/L	2.7	1	1	3.7	3.8	95	107	75-125	3	20
Sodium	mg/L	10.3	1	1	11.0	11.4	68	109	75-125	4	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

QC Batch:	548844	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D ATL
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2919468 Matrix: Water

Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/22/20 16:52	
Iron	mg/L	ND	0.040	0.015	06/22/20 16:52	
Magnesium	mg/L	0.011J	0.050	0.011	06/22/20 16:52	
Manganese	mg/L	ND	0.040	0.0061	06/22/20 16:52	
Potassium	mg/L	ND	0.20	0.026	06/22/20 16:52	
Sodium	mg/L	ND	1.0	0.19	06/22/20 16:52	

LABORATORY CONTROL SAMPLE: 2919473

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.97J	97	80-120	
Iron	mg/L	1	1.0	100	80-120	
Magnesium	mg/L	1	1.0	102	80-120	
Manganese	mg/L	1	0.96	96	80-120	
Potassium	mg/L	1	0.86	86	80-120	
Sodium	mg/L	1	1.0	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919474 2919475

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
Calcium	mg/L	517	1	1	511	511	-681	-642	75-125	0	20	M6
Iron	mg/L	2.4	1	1	3.3	3.3	92	93	75-125	0	20	
Magnesium	mg/L	71.5	1	1	71.4	71.6	-16	5	75-125	0	20	M1
Manganese	mg/L	10.6	1	1	11.3	11.2	67	58	75-125	1	20	M1
Potassium	mg/L	8.3	1	1	9.2	9.2	89	91	75-125	0	20	
Sodium	mg/L	11.5	1	1	12.3	12.3	79	81	75-125	0	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548509 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2918043 Matrix: Water

Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	06/19/20 17:32	
Barium	mg/L	ND	0.010	0.00049	06/19/20 17:32	
Beryllium	mg/L	ND	0.0030	0.000074	06/19/20 17:32	
Boron	mg/L	ND	0.10	0.0049	06/19/20 17:32	
Cadmium	mg/L	ND	0.0025	0.00011	06/19/20 17:32	
Chromium	mg/L	ND	0.010	0.00039	06/19/20 17:32	
Cobalt	mg/L	ND	0.0050	0.00030	06/19/20 17:32	
Lead	mg/L	ND	0.0050	0.000046	06/19/20 17:32	
Lithium	mg/L	ND	0.030	0.00078	06/19/20 17:32	
Molybdenum	mg/L	ND	0.010	0.00095	06/19/20 17:32	
Selenium	mg/L	ND	0.010	0.0013	06/19/20 17:32	
Thallium	mg/L	ND	0.0010	0.000052	06/19/20 17:32	

LABORATORY CONTROL SAMPLE: 2918044

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	0.098	98	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.094	94	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2918045 2918046

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92482427001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	ND	0.1	0.1	0.094	0.094	93	93	75-125	0	20	
Barium	mg/L	9.3 ug/L	0.1	0.1	0.10	0.10	95	95	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	0	20	
Boron	mg/L	54.3 ug/L	1	1	1.0	1.0	96	96	75-125	0	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Parameter	Units	2918045		2918046		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482427001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.093	0.094	93	94	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.097	0.098	96	97	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.096	0.094	96	94	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	0.097	0.096	97	96	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.092	97	92	75-125	5	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548895 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2919709 Matrix: Water
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	06/23/20 13:04	
Barium	mg/L	ND	0.010	0.00049	06/23/20 13:04	
Beryllium	mg/L	ND	0.0030	0.000074	06/23/20 13:04	
Boron	mg/L	ND	0.10	0.0049	06/23/20 13:04	
Cadmium	mg/L	ND	0.0025	0.00011	06/23/20 13:04	
Chromium	mg/L	ND	0.010	0.00039	06/23/20 13:04	
Cobalt	mg/L	ND	0.0050	0.00030	06/23/20 13:04	
Lead	mg/L	ND	0.0050	0.000046	06/23/20 13:04	
Lithium	mg/L	ND	0.030	0.00078	06/23/20 13:04	
Molybdenum	mg/L	ND	0.010	0.00095	06/23/20 13:04	
Selenium	mg/L	ND	0.010	0.0013	06/23/20 13:04	
Thallium	mg/L	ND	0.0010	0.000052	06/23/20 13:04	

LABORATORY CONTROL SAMPLE: 2919710

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.096	96	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919711 2919712

Parameter	Units	MS 92482800001		MSD		MS 2919712		MSD 2919712		% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	99	102	75-125	3	20	
Barium	mg/L	0.17	0.1	0.1	0.26	0.28	92	109	75-125	6	20	
Beryllium	mg/L	ND	0.1	0.1	0.095	0.095	95	95	75-125	0	20	
Boron	mg/L	0.045J	1	1	1.0	0.98	95	94	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Parameter	Units	2919711		2919712		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		9248280001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.096	0.10	96	101	75-125	5	20		
Lead	mg/L	ND	0.1	0.1	0.096	0.096	96	96	75-125	1	20		
Lithium	mg/L	0.019J	0.1	0.1	0.12	0.12	99	98	75-125	0	20		
Molybdenum	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548606 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: 92482649001, 92482649002

METHOD BLANK: 2918729 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/19/20 17:58	

LABORATORY CONTROL SAMPLE: 2918730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	419	105	84-108	

SAMPLE DUPLICATE: 2918731

Parameter	Units	92482647001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	18.0	15.0	18	10	D6

SAMPLE DUPLICATE: 2918732

Parameter	Units	92482647005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	28.0	43.0	42	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

QC Batch: 548907	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: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2919762 Matrix: Water

Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/22/20 17:30	

LABORATORY CONTROL SAMPLE: 2919763

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

SAMPLE DUPLICATE: 2919764

Parameter	Units	92482662002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	163	182	11	10	D6

SAMPLE DUPLICATE: 2919765

Parameter	Units	92482737002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	97.0	86.0	12	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549851 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2923886 Matrix: Water

Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	06/29/20 15:57	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	06/29/20 15:57	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	06/29/20 15:57	

LABORATORY CONTROL SAMPLE: 2923887

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	52.7	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2923888 2923889

Parameter	Units	92482268001		2923889		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	ND	50	50	54.3	54.2	109	108	80-120	0	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2923890 2923891

Parameter	Units	92482880003		2923891		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	8.3	50	50	63.0	63.9	109	111	80-120	2	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 550396 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2926273 Matrix: Water
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	06/30/20 13:53	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	06/30/20 13:53	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	06/30/20 13:53	

LABORATORY CONTROL SAMPLE: 2926274

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	49.6	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2926275 2926276

Parameter	Units	92483174015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	ND	50	50	50.7	50.1	101	100	80-120	1	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2926277 2926278

Parameter	Units	92482649003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	ND	50	50	57.1	57.5	104	105	80-120	1	25	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

QC Batch: 549382 Analysis Method: SM 4500-S2D-2011
 QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
 Laboratory: Pace Analytical Services - Asheville
 Associated Lab Samples: 92482649001, 92482649002, 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2921743 Matrix: Water
 Associated Lab Samples: 92482649001, 92482649002, 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	06/24/20 18:53	

LABORATORY CONTROL SAMPLE: 2921744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2921745 2921746

Parameter	Units	92482649001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.55	0.54	110	109	80-120	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2921747 2921748

Parameter	Units	92482649002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.34	0.34	67	67	80-120	1	10	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549186 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: 92482649001, 92482649002, 92482649003

METHOD BLANK: 2920985 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002, 92482649003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/24/20 23:11	
Fluoride	mg/L	ND	0.10	0.050	06/24/20 23:11	
Sulfate	mg/L	ND	1.0	0.50	06/24/20 23:11	

LABORATORY CONTROL SAMPLE: 2920986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.2	102	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	51.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2920987 2920988

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482762001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	1.2	50	50	49.9	49.9	97	97	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.5	97	97	90-110	1	10		
Sulfate	mg/L	ND	50	50	48.9	48.9	97	97	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2920989 2920990

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92483147008	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	2.7	50	50	55.2	57.4	105	110	90-110	4	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.6	97	102	90-110	5	10		
Sulfate	mg/L	0.74J	50	50	53.3	55.4	105	109	90-110	4	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549584 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: 92482649004, 92482649005, 92482649006, 92482649007

METHOD BLANK: 2922593 Matrix: Water
Associated Lab Samples: 92482649004, 92482649005, 92482649006, 92482649007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/25/20 15:50	
Fluoride	mg/L	ND	0.10	0.050	06/25/20 15:50	
Sulfate	mg/L	ND	1.0	0.50	06/25/20 15:50	

LABORATORY CONTROL SAMPLE: 2922594

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	2.6	105	90-110	
Sulfate	mg/L	50	51.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2922595 2922596

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92483318001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	6.6	6.6	50	50	55.6	55.0	98	97	90-110	1	10	
Fluoride	mg/L	0.090J	0.090J	2.5	2.5	2.7	2.6	103	102	90-110	1	10	
Sulfate	mg/L	5.5	5.5	50	50	55.0	54.4	99	98	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2922597 2922598

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482981002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	21.7	21.7	50	50	70.6	71.0	98	99	90-110	1	10	
Fluoride	mg/L	ND	ND	2.5	2.5	2.5	2.5	99	98	90-110	0	10	
Sulfate	mg/L	8.0	8.0	50	50	58.0	58.1	100	100	90-110	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 550052 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: 92482649008

METHOD BLANK: 2925000 Matrix: Water
Associated Lab Samples: 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/27/20 15:08	
Fluoride	mg/L	ND	0.10	0.050	06/27/20 15:08	
Sulfate	mg/L	ND	1.0	0.50	06/27/20 15:08	

LABORATORY CONTROL SAMPLE: 2925001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.5	103	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	50.9	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2925002 2925003

Parameter	Units	92482649008		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	160	50	50	206	206	91	92	90-110	0	10		
Fluoride	mg/L	0.10	2.5	2.5	2.5	2.5	95	97	90-110	2	10		
Sulfate	mg/L	292	50	50	337	339	91	94	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2925004 2925005

Parameter	Units	92483686007		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	33.3	50	50	84.9	86.5	103	106	90-110	2	10		
Fluoride	mg/L	0.28	2.5	2.5	2.7	2.9	97	103	90-110	5	10		
Sulfate	mg/L	1960	50	50	2020	2020	119	118	90-110	0	10 M6		

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QUALIFIERS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482649001	MW-21D				
92482649002	MW-33				
92482649003	MW-35				
92482649005	MW-34D				
92482649006	MW-36D				
92482649007	MW-37D				
92482649008	MW-37D, FILTERED				
92482649001	MW-21D	EPA 3010A	548539	EPA 6010D	548601
92482649002	MW-33	EPA 3010A	548539	EPA 6010D	548601
92482649003	MW-35	EPA 3010A	548844	EPA 6010D	548861
92482649004	FB-02	EPA 3010A	548844	EPA 6010D	548861
92482649005	MW-34D	EPA 3010A	548844	EPA 6010D	548861
92482649006	MW-36D	EPA 3010A	548844	EPA 6010D	548861
92482649007	MW-37D	EPA 3010A	548844	EPA 6010D	548861
92482649008	MW-37D, FILTERED	EPA 3010A	548844	EPA 6010D	548861
92482649001	MW-21D	EPA 3005A	548509	EPA 6020B	548546
92482649002	MW-33	EPA 3005A	548509	EPA 6020B	548546
92482649003	MW-35	EPA 3005A	548895	EPA 6020B	548915
92482649004	FB-02	EPA 3005A	548895	EPA 6020B	548915
92482649005	MW-34D	EPA 3005A	548895	EPA 6020B	548915
92482649006	MW-36D	EPA 3005A	548895	EPA 6020B	548915
92482649007	MW-37D	EPA 3005A	548895	EPA 6020B	548915
92482649008	MW-37D, FILTERED	EPA 3005A	548895	EPA 6020B	548915
92482649001	MW-21D	SM 2450C-2011	548606		
92482649002	MW-33	SM 2450C-2011	548606		
92482649003	MW-35	SM 2450C-2011	548907		
92482649004	FB-02	SM 2450C-2011	548907		
92482649005	MW-34D	SM 2450C-2011	548907		
92482649006	MW-36D	SM 2450C-2011	548907		
92482649007	MW-37D	SM 2450C-2011	548907		
92482649008	MW-37D, FILTERED	SM 2450C-2011	548907		
92482649001	MW-21D	SM 2320B-2011	549851		
92482649002	MW-33	SM 2320B-2011	549851		
92482649003	MW-35	SM 2320B-2011	550396		
92482649004	FB-02	SM 2320B-2011	550396		
92482649005	MW-34D	SM 2320B-2011	550396		
92482649006	MW-36D	SM 2320B-2011	550396		
92482649007	MW-37D	SM 2320B-2011	550396		
92482649008	MW-37D, FILTERED	SM 2320B-2011	550396		
92482649001	MW-21D	SM 4500-S2D-2011	549382		
92482649002	MW-33	SM 4500-S2D-2011	549382		
92482649003	MW-35	SM 4500-S2D-2011	549382		
92482649004	FB-02	SM 4500-S2D-2011	549382		
92482649005	MW-34D	SM 4500-S2D-2011	549382		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482649006	MW-36D	SM 4500-S2D-2011	549382		
92482649007	MW-37D	SM 4500-S2D-2011	549382		
92482649008	MW-37D, FILTERED	SM 4500-S2D-2011	549382		
92482649001	MW-21D	EPA 300.0 Rev 2.1 1993	549186		
92482649002	MW-33	EPA 300.0 Rev 2.1 1993	549186		
92482649003	MW-35	EPA 300.0 Rev 2.1 1993	549186		
92482649004	FB-02	EPA 300.0 Rev 2.1 1993	549584		
92482649005	MW-34D	EPA 300.0 Rev 2.1 1993	549584		
92482649006	MW-36D	EPA 300.0 Rev 2.1 1993	549584		
92482649007	MW-37D	EPA 300.0 Rev 2.1 1993	549584		
92482649008	MW-37D, FILTERED	EPA 300.0 Rev 2.1 1993	550052		

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

MO# : 92482649

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information	
Company	GA Power	Report To	SCS Contacts	Agency	Southern Co.
Address	Atlanta, GA	Copy To	Geosynthetic Contacts	Company Name	
Email To	SCS Contacts	Purchase Order No.		Address	
Phone	Fax	Project Name	Plant Hammond AP-2 Non-Routine	Rate Code	
Requested Due Date/At:	5 Day	Project Number	GW65618	Over Sight Manager	Kevin Herring
				Price Program #	
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 type="checkbox"/> OTHER (specify)			Chloride, Fluoride, Sulfate TDS Metals* RAD 226/228 Alkalinity, Bicarbonate Sulfide		
Site Location			Residual Chlorine (Y/N)		
STATE: GA			pH = 6.47		

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	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	SAMPLER NAME AND SIGNATURE	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLER CONDITIONS			
					DATE	TIME												Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1	MMW-21D	WT G	WT G	4/17/20	9:30	18	7	3	3	1		Shawn LTN	6/17/20	1715	Shawn LTN	6/17/20	1715				
2	MMW-32	WT G	WT G																		
3	MMW-34B	WT G	WT G																		
4	MMW-35	WT G	WT G																		
5	MMW-30D	WT G	WT G																		
6	MMW-37D	WT G	WT G																		
7	EB-02	WT G	WT G																		
8																					
9																					
10																					
11																					
12																					

PRINT Name of SAMPLER: Shawn LTN
 SIGNATURE of SAMPLER: *Shawn LTN*
 DATE Signed (MM/DD/YY): 6/17/2020

F-ALL-Q-02/rev.07, 15-Feb-2007



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

W0#: 92482649
PM: KLH1 Due Date: 07/02/20
CLIENT: GR-GR Power

Section A Required Client Information		Section B Required Project Information		Section C Invoicing Information	
Company	GA Power	Report to	SCS Contacts	Company Name	Southem Co.
Address	Atlanta, GA	Copy to	Geosynic Contacts	Address	
Phone		Purchase Order No.		Price Quote Reference	
Requested Due Date/TAT:	5 day	Project Name	Plant Hammond A-P-2 Non-Routine	Price Pinned	Kevin Herrin
		Project Number	GW65818	Manager	
				Price Pinned #	

REGULATORY AGENCY: _____

NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER ORA

Site Location: GA _____ STATE: _____

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information	Valid Matrix Codes MUTUAL CODE	MATRIX CODE (use valid code to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Residual Chlorine (Y/N)	pH =																												
											Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol				Other	Chloride, Fluoride, Sulfate	PO ₄	Metals*	RAD 226/228	Alkalinity, Bicarbonate	Sulfide																					
1	MW-210									7	3	3	1	X	X	X	X	X																														
2	MW-33									7	3	3	1	X	X	X	X	X																														
3	MW-34D													X	X	X	X	X																														
4	MW-95													X	X	X	X	X																														
5	MW-36D													X	X	X	X	X																														
6	MW-37D													X	X	X	X	X																														
7	FB-02													X	X	X	X	X																														
8														X	X	X	X	X																														

Additional Comments:

Relinquished by/Affiliation: [Handwritten Signature] DATE: 6/18/20 TIME: 1845

Accepted by/Affiliation: [Handwritten Signature] DATE: 6-18-20 TIME: 10:37

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

Signature of Sampler: [Handwritten Signature] DATE Signed: 6/17/2020

Purchase Order. By signing this form you are accepting Pace's NET 30 day payment terms, and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days. Pace Analytical, 1110 Peachtree St, NE Atlanta, GA 30309



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

Section A Required Client Information Company: GA Power Address: Atlanta, GA		Section B Required Project Information Report To: SCS Contacts Copy To: Geosynlec Contacts		Section C Invoice Information Company Name: Southern Co Address: [blank]	
Email To: SCS Contacts Phone: Fax Requested Due Date/TAT: 5 day		Purchase Order No.: Project Name: Plant Hammond AP-2 Non-Routine Project Number: GW65818		Analysis: Analyte: [blank] Sample Grade: [blank] Sample Project: Kevin Herring Sample Material: [blank] Sample Point: [blank]	
REGULATORY AGENCY N/PDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/> Site Location: GA STATE: GA			Requested Analysis Filtered (Y/N)		
Residual Chlorine (Y/N)			Page: _____ of _____ 2		

ITEM #	Section D Required Client Information Valid Matrix Codes MATERIAL: [blank] GENERAL USE: [blank] WASTE WATER: [blank] PRODUCT: [blank] SOURCE: [blank] USE: [blank] TYPE: [blank] DATE: [blank] ANALYST: [blank] OTHER: [blank] TITLE: [blank]	MATRIX CODE (See instructions to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test						Residual Chlorine (Y/N)	SAMPLE CONDITIONS																
				DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate	TDS			Metals*	RAD 226/228	Alkalinity, Bicarbonate	Sulfide												
1	MMW-21D			WT G			1																														
2	MMW-99			WT G			1																														
3	MMW-34D			WT G			1																														
4	MMW-35			WT G	6/18/20	11:52		3																													
5	MMW-30B			WT G				3																													
6	MMW-32D			WT G				3																													
7	FB-02			WT G	6/18/20	17:30		3																													
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.		REQUISITIONED BY/AFFILIATION Chad Russel / GCS Molina Munin / Geo Chad Russel		DATE 6/18/20 6/19/20 6/19/20		TIME 2:30 1:30 1:15		ACCEPTED BY/AFFILIATION Molina Munin / Geo Chad Russel		DATE 6/18/20 6/19/20 6/19/20		TIME 2:30 1:30 1:15		SAMPLE CONDITIONS Temp in °C: 2.7 Received on Ice (Y/N): Y Custody Sealed Cooler (N/Y): N Samples Intact (N/Y): Y	
---	--	---	--	--	--	-------------------------------------	--	---	--	--	--	-------------------------------------	--	--	--

Printer Name of SAMPLER: Chad Russel
Signature of SAMPLER: Chad Russel
DATE Signed (MM/DD/YYYY): 6/18/20



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

Page: 2 of 2

Section A Required Client Information Company: <u>GA Power</u> Address: <u>Atlanta, GA</u> Email To: <u>SCS Contacts</u> Phone: <u>Fax</u> Requested Due Date/Time: <u>5 Day</u>		Section B Required Project Information Report To: <u>SCS Contacts</u> Copy To: <u>Geosynthetic Contacts</u> Purchase Order No.: Project Name: <u>Plant Hammond AP-2 Non-Routine</u> Project Number: <u>GM6581B</u>		Section C Invoice Information Attention: <u>Southern Co.</u> Company Name: Address: Sales Code: Sales Person: <u>Kevin Herring</u> Buyer: Purchase Order #		REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/> Site Location: <u>CA</u> STATE:	
---	--	---	--	---	--	--	--

ITEM #	Section D Requires Client Submission SAMPLE ID (As of 03/1/07) Sample IDs MUST BE UNIQUE	Valid Matrix Codes MATERIALS CODE TYPE METHOD SAMPLING DATE TIME ANALYSIS	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)		
					DATE	TIME	DATE					TIME	Chloride, Fluoride, Sulfate	TDS	Metals*	RAD 226/228	Alkalinity, Bicarbonate		Sulfide	
1	MW-218			G					3			X	X	X	X	X	X	X		
2	MW-33			G					3			X	X	X	X	X	X	X		
3	MW-34D			G					3			X	X	X	X	X	X	X		
4	MW-35			G	6/18/2018	1805		19	3			X	X	X	X	X	X	X		
5	MW-36D			G	6/18/2018	0005		20	3			X	X	X	X	X	X	X		
6	MW-37D			G	6/18/2018	1315		20	3			X	X	X	X	X	X	X		
7	FB-02			G					3			X	X	X	X	X	X	X		
8	MW-37D, Filtered			G	6/18/2018	1330		20	3			X	X	X	X	X	X	X		
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS
Please note dry wells, same through any seals and sampled, and note when no test sample for the event has been taken.

RELINQUISHED BY / AFFILIATION
Shawn LM, Georgia Power
Date: 6/18/2018
Time: 1850
Signature: [Signature]

ACCEPTED BY / AFFILIATION
Melia Adams
Date: 6/18/2018
Time: 2030
Signature: [Signature]

SAMPLER NAME AND SIGNATURE
Shawn LM
Date Signed (MANDATORY): 6/18/2018
Signature: [Signature]

REGULATORY AGENCY
NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER
Site Location: CA
STATE: CA

TEMPERATURE
Temp in °C: 0.7

SAMPLE CONDITIONS
Received on Ice (Y/N): Y
Custody Sealed Cont. (Y/N): N
Samples Intact (Y/N): Y

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

July 23, 2020

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant Hammond-Ash Pond #2
Pace Project No.: 92486807

Dear Kelley Sharpe:

Enclosed are the analytical results for sample(s) received by the laboratory on July 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 - Peachtree Corners, GA

Client provided updated COC on 7/20/20.

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

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Jean Brown, Georgia Power
David Duncan, Southern Company
Warren Johnson, ARCADIS - Atlanta
Christine Ridley, Southern Company
Erika Yeager, Southern Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92486807001	AP-2 UP	Water	07/17/20 13:50	07/17/20 17:34
92486807002	AP-2 MID	Water	07/17/20 13:40	07/17/20 17:34
92486807003	AP-2 DOWN	Water	07/17/20 11:50	07/17/20 17:34

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SAMPLE ANALYTE COUNT

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92486807001	AP-2 UP	EPA 6020B	CW1	2	PASI-GA
92486807002	AP-2 MID	EPA 6020B	CW1	2	PASI-GA
92486807003	AP-2 DOWN	EPA 6020B	CW1	2	PASI-GA

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

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ANALYTICAL RESULTS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Sample: AP-2 UP		Lab ID: 92486807001		Collected: 07/17/20 13:50	Received: 07/17/20 17:34	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 15:51	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 15:51	7440-48-4	

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ANALYTICAL RESULTS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Sample: AP-2 MID		Lab ID: 92486807002		Collected: 07/17/20 13:40		Received: 07/17/20 17:34		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Boron	0.12	mg/L	0.040	1	07/20/20 17:34	07/21/20 15:56	7440-42-8		
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 15:56	7440-48-4		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Sample: AP-2 DOWN	Lab ID: 92486807003	Collected: 07/17/20 11:50	Received: 07/17/20 17:34	Matrix: Water
--------------------------	----------------------------	---------------------------	--------------------------	---------------

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Pace Analytical Services - Peachtree Corners, GA

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:17	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:17	7440-48-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

QC Batch: 554508

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020 MET

Laboratory:

Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92486807001, 92486807002, 92486807003

METHOD BLANK: 2945842

Matrix: Water

Associated Lab Samples: 92486807001, 92486807002, 92486807003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	07/21/20 15:05	
Cobalt	mg/L	ND	0.0050	07/21/20 15:05	

LABORATORY CONTROL SAMPLE: 2945843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.97	97	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2945844 2945845

Parameter	Units	92486806001 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	1.0	0.97	98	94	75-125	4	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond-Ash Pond #2
Pace Project No.: 92486807

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92486807001	AP-2 UP	EPA 3005A	554508	EPA 6020B	554522
92486807002	AP-2 MID	EPA 3005A	554508	EPA 6020B	554522
92486807003	AP-2 DOWN	EPA 3005A	554508	EPA 6020B	554522

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information: Company: ARCADIS - Atlanta Address: 2839 Paces Ferry Rd Atlanta, GA 30339 Email: walter.johnson@arcadis.com Phone: 678.485.5298 Fax: Requested Due Date: 7 Day TAT

Section B Required Project Information: Report To: Ben Hodges, GPC Copy To: Purchase Order #: SCS10382775 Project Name: Plant Hammond AP-2 Project #:

Section C Invoice Information: Attention: Ben Hodges Company Name: GPC Address: Pace Queue: Pace Project Manager: Mayla Pariss@pecalabs.com, Pace Profile #: 239

Regulatory Agency: State / Location: GA

Page: 1 of 1

ITEM #	MATRIX	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analytes Test	Requested Analyte Filtered (Y/N)	Residual Chlorine (Y/N)	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
					START DATE	END DATE											
1	AP-2 UP	WT			7-17	13:50				X							
2	AP-2 MID	WT			7-17	15:40				X							
3	AP-2 DOWN	WT			7-17	11:50				X							
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

WO#: 92486807

92486807

SAMPLER NAME AND SIGNATURE: *Walter Johnson*

PRINT Name of SAMPLER: *Walter Johnson*

SIGNATURE of SAMPLER: *Walter Johnson*

DATE Signed: 7-17-20

REIMBURSED BY / AFFILIATION: *Plant Hammond*

DATE: 7-17-20

ACCEPTED BY / AFFILIATION: *R. Williams*

DATE: 7-17-20

TIME: 2:47 PM

SAMPLE CONDITIONS: Y N Y



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: ARCADIS - Atlanta Address: 2839 Paces Ferry Rd Atlanta, GA 30339 Email: walter.johnson@arcadis.com Phone: 678.485.5298 Fax: Project Name: Plant Hammond AP-2 Requested Due Date: 7 Day TAT

Section B Required Project Information: Report To: Ben Hodges, GPC Copy To: Purchase Order #: SCS10382775 Project Name: Plant Hammond AP-2 Project #:

Section C Invoice Information: Attention: Ben Hodges Company Name: GPC Address: Pace Queue: Pace Project Manager: Mayla Parris@pecalabs.com, Pace Profile #: 239

Regulatory Agency: State / Location: GA

Page: 1 of 1

ITEM #	MATRIX One Character per box. (A-Z, 0-9 / -) Sample IDs must be unique	CODE DW WT P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analyte Filtered (Y/N)	Residual Chlorine (Y/N)	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
					START DATE	END DATE											
1	AP-2 UP	WT			7-17	13:50											
2	AP-2 MID	WT			7-17	13:50											
3	AP-2 DOWN	WT			7-17	11:50											
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

WO#: 92486807

92486807

RELEASING BY / APPLICATION: *Walter Johnson* DATE: 7/17/20

ACCEPTED BY / APPLICATION: *K. Williams* DATE: 7/17/20

SAMPLER NAME AND SIGNATURE: *Walter Johnson*

PRINT Name of SAMPLER: *Walter Johnson*

SIGNATURE of SAMPLER: *Walter Johnson*

DATE Signed: 7/17/20



Sample Condition Upon Receipt

Client Name: Arcadis ATL

WO#: **92486807**

PM: NP Due Date: 07/22/20
CLIENT: GA-ArcadAt1

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

Cooler Temperature 2.4 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/18/2004

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 type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

July 23, 2020

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant Hammond-Coosa River
Pace Project No.: 92486808

Dear Kelley Sharpe:

Enclosed are the analytical results for sample(s) received by the laboratory on July 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 - Peachtree Corners, GA

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

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Jean Brown, Georgia Power
David Duncan, Southern Company
Warren Johnson, ARCADIS - Atlanta
Christine Ridley, Southern Company
Erika Yeager, Southern Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92486808001	H+0.75	Water	07/17/20 11:40	07/17/20 17:34
92486808002	H+0.25	Water	07/17/20 11:55	07/17/20 17:34
92486808003	H-0.5	Water	07/17/20 12:00	07/17/20 17:34
92486808004	H-2	Water	07/17/20 13:00	07/17/20 17:34

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond-Coosa River
Pace Project No.: 92486808

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92486808001	H+0.75	EPA 6020B	CW1	3	PASI-GA
92486808002	H+0.25	EPA 6020B	CW1	3	PASI-GA
92486808003	H-0.5	EPA 6020B	CW1	3	PASI-GA
92486808004	H-2	EPA 6020B	CW1	3	PASI-GA

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Sample: H+0.75	Lab ID: 92486808001	Collected: 07/17/20 11:40	Received: 07/17/20 17:34	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Pace Analytical Services - Peachtree Corners, GA

Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:23	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:23	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 16:23	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Sample: H+0.25	Lab ID: 92486808002	Collected: 07/17/20 11:55	Received: 07/17/20 17:34	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Pace Analytical Services - Peachtree Corners, GA

Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:29	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:29	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 16:29	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Sample: H-0.5	Lab ID: 92486808003	Collected: 07/17/20 12:00	Received: 07/17/20 17:34	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Pace Analytical Services - Peachtree Corners, GA

Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:34	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:34	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 16:34	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Sample: H-2	Lab ID: 92486808004	Collected: 07/17/20 13:00	Received: 07/17/20 17:34	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Pace Analytical Services - Peachtree Corners, GA

Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:40	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:40	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 16:40	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-Coosa River
Pace Project No.: 92486808

QC Batch: 554508 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92486808001, 92486808002, 92486808003, 92486808004

METHOD BLANK: 2945842 Matrix: Water
Associated Lab Samples: 92486808001, 92486808002, 92486808003, 92486808004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	07/21/20 15:05	
Cobalt	mg/L	ND	0.0050	07/21/20 15:05	
Molybdenum	mg/L	ND	0.010	07/21/20 15:05	

LABORATORY CONTROL SAMPLE: 2945843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.97	97	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2945844 2945845

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92486806001 Result	Spike Conc.	Spike Conc.	Conc.								
Boron	mg/L	ND	1	1	1.0	0.97	98	94	75-125	4	20		
Cobalt	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond-Coosa River
Pace Project No.: 92486808

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92486808001	H+0.75	EPA 3005A	554508	EPA 6020B	554522
92486808002	H+0.25	EPA 3005A	554508	EPA 6020B	554522
92486808003	H-0.5	EPA 3005A	554508	EPA 6020B	554522
92486808004	H-2	EPA 3005A	554508	EPA 6020B	554522

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: ARCADIS - Atlanta	Address: 2839 Paces Ferry Rd Atlanta, GA 30339	Report To: Ben Hodges, GPC	Copy To:	Attention: Ben Hodges	Company Name: GPC
Email: warren.johnson@arcadis.com	Phone: 678.485.5298	Purchase Order #: SCS10382775	Project Name: Plant Hammond Coosa River	Address: Pace Quade	Face Project Manager: Mayla Parke@pacelabs.com
Requested Due Date: 7 Day TAT		Project #:		Pace Profile #: 2239	
		Regulatory Agency: GA		State / Location: GA	

ITEM #	SAMPLE ID <small>One Character per box. (A-Z, 0-9 /, -) Sample IDs must be unique</small>	MATRIX <small>Daring Water Water Waste Water Product Soils/Sed Oil Wipe Air Other Tissue</small>	CODE <small>DW WT WW P SL OL WP AR OT TS</small>	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analyses Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)				
						START DATE TIME	END DATE TIME										
1	H-0-75			WT		7/17	11:40					X	X	X			
2	H-0-25			WT		7/17	11:55					X	X	X			
3	H-0-5			WT		7/17	12:00					X	X	X			
4	H-2			WT		7/17	13:00					X	X	X			
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		DATE		TIME		DATE		TIME		SAMPLE CONDITIONS	
		<i>Warren Johnson</i>		<i>K. McWhorter</i>		7/17/20				7/17/20		17:45		7 NY	
<p>SAMPLER NAME AND SIGNATURE</p> <p>PRINT Name of SAMPLER: <i>Maya Parke</i></p> <p>SIGNATURE OF SAMPLER: <i>Maya Parke</i></p> <p>DATE Signed: 7/17/20</p>															
TEMP in C		Received on ice (Y/N)		Custody Sealed Cooler (Y/N)		Samples Intact (Y/N)									

WO# : 92486808

92486808



Sample Condition Upon Receipt

WO#: 92486808

Client Name: Arcadis ATL

PH: NP Due Date: 07/22/20

CLIENT: GA-ArcadAt1

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

Tracking #: _____

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

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

Thermometer Used 233 Type of Ice: [x] Wet Blue None [] Samples on ice, cooling process has begun

Cooler Temperature 1.3 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Proj. Due Date:
Proj. Name:

Date and Initials of person examining contents: 7/18/2004

Table with 16 rows of checklist items and checkboxes. Items include Chain of Custody Present, Samples Arrived within Hold Time, Short Hold Time Analysis, etc.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

October 19, 2020

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

RE: Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 16, 2020 and September 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

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

This report was revised 10/19/20 to correct a field pH typo.

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-2 SEMIANNUAL

Pace Project No.: 92495900

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-2 SEMIANNUAL

Pace Project No.: 92495900

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92495900001	HGWA-1	Water	09/15/20 14:01	09/16/20 11:14
92495900002	HGWA-2	Water	09/15/20 10:58	09/16/20 11:14
92495900003	HGWA-3	Water	09/15/20 11:45	09/16/20 11:14
92495900004	HGWA-4	Water	09/15/20 14:35	09/16/20 11:14
92495900005	HGWA-5	Water	09/15/20 10:54	09/16/20 11:14
92495900006	HGWA-6	Water	09/15/20 12:40	09/16/20 11:14
92495900007	HGWC-18	Water	09/15/20 16:17	09/16/20 11:14
92495900008	HGWC-17	Water	09/16/20 17:30	09/17/20 09:45
92495900009	HGWA-43D	Water	09/16/20 11:58	09/17/20 09:45
92495900010	HGWA-44D	Water	09/16/20 15:18	09/17/20 09:45
92495900011	HGWC-15	Water	09/17/20 14:25	09/18/20 10:20
92495900012	HGWC-16	Water	09/17/20 11:52	09/18/20 10:20
92495900013	MW-22	Water	09/17/20 17:00	09/18/20 10:20
92495900014	MW-23D	Water	09/17/20 17:18	09/18/20 10:20
92495900015	HGWA-42D	Water	09/17/20 13:45	09/18/20 10:20
92495900016	FB-02	Water	09/17/20 18:46	09/18/20 10:20
92495900017	FD-02	Water	09/17/20 00:00	09/18/20 10:20
92495900018	HGWC-14	Water	09/18/20 09:20	09/21/20 09:25
92495900019	MW-21D	Water	09/21/20 10:30	09/22/20 09:25
92495900020	MW-33	Water	09/21/20 13:00	09/22/20 09:25
92495900021	MW-35	Water	09/21/20 12:55	09/22/20 09:25
92495900022	MW-34D	Water	09/23/20 16:30	09/24/20 10:25
92495900023	MW-36D	Water	09/23/20 11:15	09/24/20 10:25
92495900024	MW-37D	Water	09/23/20 08:50	09/24/20 10:25
92495900025	MW-34D FILTERED	Water	09/23/20 17:00	09/24/20 10:25

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92495900001	HGWA-1	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495900002	HGWA-2	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495900003	HGWA-3	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495900004	HGWA-4	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495900005	HGWA-5	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495900006	HGWA-6	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495900007	HGWC-18	EPA 6010D	DRB	6

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92495900008	HGWC-17	EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495900009	HGWA-43D	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	13
92495900010	HGWA-44D	EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
92495900011	HGWC-15	SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB, KH	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	12
92495900012	HGWC-16	SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	12

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92495900013	MW-22	EPA 6010D	DRB, KH	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92495900014	MW-23D	EPA 6010D	DRB, KH	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92495900015	HGWA-42D	EPA 6010D	DRB	6
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495900016	FB-02	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
92495900017	FD-02	SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB, KH	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
92495900018	HGWC-14	SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB, KH	6
		EPA 6020B	CW1, KH	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92495900019	MW-21D	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495900020	MW-33	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495900021	MW-35	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495900022	MW-34D	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1, KH	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495900023	MW-36D	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	KH	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495900024	MW-37D	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	KH	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92495900025	MW-34D FILTERED	EPA 6010D	DRB	6
		EPA 6020B	CW1, KH	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	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-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900001	HGWA-1					
	pH	7.15	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	103	mg/L	1.0	09/23/20 17:49	
EPA 6010D	Iron	0.087	mg/L	0.040	09/23/20 17:49	
EPA 6010D	Magnesium	4.3	mg/L	0.050	09/23/20 17:49	
EPA 6010D	Manganese	0.18	mg/L	0.040	09/23/20 17:49	
EPA 6010D	Potassium	0.34	mg/L	0.20	09/23/20 17:49	B
EPA 6010D	Sodium	21.1	mg/L	1.0	09/23/20 17:49	
EPA 6020B	Barium	0.035	mg/L	0.010	09/23/20 17:15	
EPA 6020B	Boron	0.017J	mg/L	0.10	09/23/20 17:15	
EPA 6020B	Lithium	0.00087J	mg/L	0.030	09/23/20 17:15	
SM 2450C-2011	Total Dissolved Solids	265	mg/L	10.0	09/17/20 15:18	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	307	mg/L	5.0	09/24/20 19:36	
SM 2320B-2011	Alkalinity, Total as CaCO3	307	mg/L	5.0	09/24/20 19:36	
EPA 300.0 Rev 2.1 1993	Chloride	13.4	mg/L	1.0	09/18/20 21:31	
EPA 300.0 Rev 2.1 1993	Fluoride	0.082J	mg/L	0.10	09/18/20 21:31	
EPA 300.0 Rev 2.1 1993	Sulfate	47.3	mg/L	1.0	09/18/20 21:31	
92495900002	HGWA-2					
	pH	5.22	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	21.1	mg/L	1.0	09/23/20 17:53	
EPA 6010D	Iron	0.78	mg/L	0.040	09/23/20 17:53	
EPA 6010D	Magnesium	2.5	mg/L	0.050	09/23/20 17:53	
EPA 6010D	Manganese	0.61	mg/L	0.040	09/23/20 17:53	
EPA 6010D	Potassium	0.89	mg/L	0.20	09/23/20 17:53	B
EPA 6010D	Sodium	7.4	mg/L	1.0	09/23/20 17:53	
EPA 6020B	Barium	0.12	mg/L	0.010	09/23/20 17:21	
EPA 6020B	Beryllium	0.00013J	mg/L	0.0030	09/23/20 17:21	
EPA 6020B	Boron	0.044J	mg/L	0.10	09/23/20 17:21	
EPA 6020B	Cadmium	0.00012J	mg/L	0.0025	09/23/20 17:21	
EPA 6020B	Cobalt	0.021	mg/L	0.0050	09/23/20 17:21	
EPA 6020B	Lead	0.000080J	mg/L	0.0050	09/23/20 17:21	
EPA 6020B	Lithium	0.0015J	mg/L	0.030	09/23/20 17:21	
SM 2450C-2011	Total Dissolved Solids	124	mg/L	10.0	09/17/20 15:18	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	26.1	mg/L	5.0	09/24/20 13:36	
SM 2320B-2011	Alkalinity, Total as CaCO3	26.1	mg/L	5.0	09/24/20 13:36	
EPA 300.0 Rev 2.1 1993	Chloride	5.0	mg/L	1.0	09/18/20 21:46	
EPA 300.0 Rev 2.1 1993	Sulfate	51.5	mg/L	1.0	09/18/20 21:46	
92495900003	HGWA-3					
	pH	7.29	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	73.1	mg/L	1.0	09/23/20 17:57	
EPA 6010D	Iron	0.26	mg/L	0.040	09/23/20 17:57	
EPA 6010D	Magnesium	4.6	mg/L	0.050	09/23/20 17:57	
EPA 6010D	Manganese	0.22	mg/L	0.040	09/23/20 17:57	
EPA 6010D	Potassium	0.46	mg/L	0.20	09/23/20 17:57	B
EPA 6010D	Sodium	4.9	mg/L	1.0	09/23/20 17:57	
EPA 6020B	Barium	0.12	mg/L	0.010	09/23/20 17:27	
EPA 6020B	Boron	0.0071J	mg/L	0.10	09/23/20 17:27	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900003	HGWA-3					
EPA 6020B	Lead	0.000042J	mg/L	0.0050	09/23/20 17:27	
EPA 6020B	Lithium	0.0026J	mg/L	0.030	09/23/20 17:27	
SM 2450C-2011	Total Dissolved Solids	258	mg/L	10.0	09/17/20 15:19	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	187	mg/L	5.0	09/24/20 13:43	
SM 2320B-2011	Alkalinity, Total as CaCO3	187	mg/L	5.0	09/24/20 13:43	
EPA 300.0 Rev 2.1 1993	Chloride	6.0	mg/L	1.0	09/18/20 22:01	
EPA 300.0 Rev 2.1 1993	Sulfate	44.7	mg/L	1.0	09/18/20 22:01	
92495900004	HGWA-4					
	pH	5.75	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	20.4	mg/L	1.0	09/23/20 18:02	M1
EPA 6010D	Iron	0.028J	mg/L	0.040	09/23/20 18:02	
EPA 6010D	Magnesium	0.88	mg/L	0.050	09/23/20 18:02	
EPA 6010D	Manganese	0.0083J	mg/L	0.040	09/23/20 18:02	
EPA 6010D	Potassium	0.28	mg/L	0.20	09/23/20 18:02	B
EPA 6010D	Sodium	7.7	mg/L	1.0	09/23/20 18:02	
EPA 6020B	Barium	0.024	mg/L	0.010	09/23/20 17:51	
EPA 6020B	Boron	0.013J	mg/L	0.10	09/23/20 17:51	
EPA 6020B	Lead	0.000049J	mg/L	0.0050	09/23/20 17:51	
SM 2450C-2011	Total Dissolved Solids	93.0	mg/L	10.0	09/17/20 15:19	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	70.2	mg/L	5.0	09/24/20 13:54	
SM 2320B-2011	Alkalinity, Total as CaCO3	70.2	mg/L	5.0	09/24/20 13:54	
EPA 300.0 Rev 2.1 1993	Chloride	3.3	mg/L	1.0	09/18/20 22:46	
92495900005	HGWA-5					
	pH	6.33	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	27.9	mg/L	1.0	09/23/20 18:27	
EPA 6010D	Iron	1.6	mg/L	0.040	09/23/20 18:27	
EPA 6010D	Magnesium	5.3	mg/L	0.050	09/23/20 18:27	
EPA 6010D	Manganese	0.071	mg/L	0.040	09/23/20 18:27	
EPA 6010D	Potassium	0.72	mg/L	0.20	09/23/20 18:27	B
EPA 6010D	Sodium	5.7	mg/L	1.0	09/23/20 18:27	
EPA 6020B	Barium	0.045	mg/L	0.010	09/23/20 18:14	
EPA 6020B	Boron	0.012J	mg/L	0.10	09/23/20 18:14	
EPA 6020B	Cobalt	0.00047J	mg/L	0.0050	09/23/20 18:14	
EPA 6020B	Lithium	0.0030J	mg/L	0.030	09/23/20 18:14	
SM 2450C-2011	Total Dissolved Solids	116	mg/L	10.0	09/17/20 15:19	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	94.0	mg/L	5.0	09/24/20 14:02	
SM 2320B-2011	Alkalinity, Total as CaCO3	94.0	mg/L	5.0	09/24/20 14:02	
EPA 300.0 Rev 2.1 1993	Chloride	1.7	mg/L	1.0	09/18/20 23:01	
EPA 300.0 Rev 2.1 1993	Fluoride	0.061J	mg/L	0.10	09/18/20 23:01	
EPA 300.0 Rev 2.1 1993	Sulfate	21.2	mg/L	1.0	09/18/20 23:01	
92495900006	HGWA-6					
	pH	7.37	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	49.9	mg/L	1.0	09/23/20 18:32	
EPA 6010D	Iron	0.32	mg/L	0.040	09/23/20 18:32	
EPA 6010D	Magnesium	9.0	mg/L	0.050	09/23/20 18:32	
EPA 6010D	Manganese	0.071	mg/L	0.040	09/23/20 18:32	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900006	HGWA-6					
EPA 6010D	Potassium	0.61	mg/L	0.20	09/23/20 18:32	B
EPA 6010D	Sodium	6.8	mg/L	1.0	09/23/20 18:32	
EPA 6020B	Barium	0.19	mg/L	0.010	09/23/20 18:31	
EPA 6020B	Boron	0.016J	mg/L	0.10	09/23/20 18:31	
EPA 6020B	Lithium	0.0095J	mg/L	0.030	09/23/20 18:31	
SM 2450C-2011	Total Dissolved Solids	217	mg/L	10.0	09/17/20 15:19	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	166	mg/L	5.0	09/24/20 14:10	
SM 2320B-2011	Alkalinity, Total as CaCO3	166	mg/L	5.0	09/24/20 14:10	
EPA 300.0 Rev 2.1 1993	Chloride	1.2	mg/L	1.0	09/18/20 23:16	
EPA 300.0 Rev 2.1 1993	Sulfate	35.3	mg/L	1.0	09/18/20 23:16	
92495900007	HGWC-18					
	pH	4.47	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	430	mg/L	10.0	09/30/20 13:56	
EPA 6010D	Iron	0.82	mg/L	0.040	09/23/20 18:36	
EPA 6010D	Magnesium	47.0	mg/L	0.050	09/23/20 18:36	
EPA 6010D	Manganese	3.4	mg/L	0.040	09/23/20 18:36	
EPA 6010D	Potassium	10.3	mg/L	0.20	09/23/20 18:36	
EPA 6010D	Sodium	12.2	mg/L	1.0	09/23/20 18:36	
EPA 6020B	Arsenic	0.0074	mg/L	0.0050	09/23/20 18:37	
EPA 6020B	Barium	0.030	mg/L	0.010	09/23/20 18:37	
EPA 6020B	Beryllium	0.0033	mg/L	0.0030	09/23/20 18:37	
EPA 6020B	Boron	9.4	mg/L	1.0	09/24/20 12:24	
EPA 6020B	Cadmium	0.0019J	mg/L	0.0025	09/23/20 18:37	
EPA 6020B	Chromium	0.00063J	mg/L	0.010	09/23/20 18:37	
EPA 6020B	Cobalt	0.16	mg/L	0.0050	09/23/20 18:37	
EPA 6020B	Lead	0.0014J	mg/L	0.0050	09/23/20 18:37	
EPA 6020B	Lithium	0.014J	mg/L	0.030	09/23/20 18:37	
EPA 6020B	Selenium	0.059	mg/L	0.010	09/23/20 18:37	
EPA 6020B	Thallium	0.00016J	mg/L	0.0010	09/23/20 18:37	
SM 2450C-2011	Total Dissolved Solids	1890	mg/L	10.0	09/17/20 15:19	
EPA 300.0 Rev 2.1 1993	Chloride	150	mg/L	15.0	09/19/20 09:40	
EPA 300.0 Rev 2.1 1993	Fluoride	0.31	mg/L	0.10	09/18/20 23:30	
EPA 300.0 Rev 2.1 1993	Sulfate	1080	mg/L	15.0	09/19/20 09:40	
92495900008	HGWC-17					
	pH	6.35	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	277	mg/L	1.0	09/23/20 18:40	
EPA 6010D	Iron	0.11	mg/L	0.040	09/23/20 18:40	
EPA 6010D	Magnesium	30.0	mg/L	0.050	09/23/20 18:40	
EPA 6010D	Manganese	3.3	mg/L	0.040	09/23/20 18:40	
EPA 6010D	Potassium	2.6	mg/L	0.20	09/23/20 18:40	
EPA 6010D	Sodium	13.8	mg/L	1.0	09/23/20 18:40	
EPA 6020B	Barium	0.025	mg/L	0.010	09/23/20 18:43	
EPA 6020B	Boron	6.7	mg/L	1.0	09/24/20 12:29	
EPA 6020B	Cobalt	0.013	mg/L	0.0050	09/23/20 18:43	
EPA 6020B	Lead	0.000065J	mg/L	0.0050	09/23/20 18:43	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	09/23/20 18:43	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900008	HGWC-17					
SM 2450C-2011	Total Dissolved Solids	1220	mg/L	10.0	09/18/20 10:00	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	205	mg/L	5.0	09/24/20 15:05	
SM 2320B-2011	Alkalinity, Total as CaCO3	205	mg/L	5.0	09/24/20 15:05	
EPA 300.0 Rev 2.1 1993	Chloride	156	mg/L	10.0	09/20/20 07:13	
EPA 300.0 Rev 2.1 1993	Fluoride	0.058J	mg/L	0.10	09/19/20 21:21	
EPA 300.0 Rev 2.1 1993	Sulfate	467	mg/L	10.0	09/20/20 07:13	
92495900009	HGWA-43D					
	pH	7.52	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	56.0	mg/L	1.0	09/23/20 18:49	
EPA 6010D	Iron	0.020J	mg/L	0.040	09/23/20 18:49	
EPA 6010D	Magnesium	18.3	mg/L	0.050	09/23/20 18:49	
EPA 6010D	Manganese	0.010J	mg/L	0.040	09/23/20 18:49	
EPA 6010D	Potassium	0.97	mg/L	0.20	09/23/20 18:49	B
EPA 6010D	Sodium	14.0	mg/L	1.0	09/23/20 18:49	
EPA 6020B	Antimony	0.00051J	mg/L	0.0030	09/23/20 18:54	
EPA 6020B	Barium	0.26	mg/L	0.010	09/23/20 18:54	
EPA 6020B	Boron	0.061J	mg/L	0.10	09/23/20 18:54	
EPA 6020B	Lead	0.000050J	mg/L	0.0050	09/23/20 18:54	
EPA 6020B	Lithium	0.0018J	mg/L	0.030	09/23/20 18:54	
EPA 6020B	Molybdenum	0.0044J	mg/L	0.010	09/23/20 18:54	
SM 2450C-2011	Total Dissolved Solids	272	mg/L	10.0	09/18/20 10:00	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	251	mg/L	5.0	09/28/20 15:11	
SM 2320B-2011	Alkalinity, Total as CaCO3	251	mg/L	5.0	09/28/20 15:11	
EPA 300.0 Rev 2.1 1993	Chloride	4.1	mg/L	1.0	09/19/20 21:36	
EPA 300.0 Rev 2.1 1993	Fluoride	0.22	mg/L	0.10	09/19/20 21:36	
EPA 300.0 Rev 2.1 1993	Sulfate	43.0	mg/L	1.0	09/19/20 21:36	
92495900010	HGWA-44D					
	pH	7.83	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	30.0	mg/L	1.0	09/23/20 18:53	
EPA 6010D	Iron	0.42	mg/L	0.040	09/23/20 18:53	
EPA 6010D	Magnesium	15.1	mg/L	0.050	09/23/20 18:53	
EPA 6010D	Manganese	0.020J	mg/L	0.040	09/23/20 18:53	
EPA 6010D	Potassium	3.2	mg/L	0.20	09/23/20 18:53	
EPA 6010D	Sodium	50.3	mg/L	1.0	09/23/20 18:53	
EPA 6020B	Antimony	0.00049J	mg/L	0.0030	09/23/20 19:00	
EPA 6020B	Barium	0.24	mg/L	0.010	09/23/20 19:00	
EPA 6020B	Boron	0.23	mg/L	0.10	09/23/20 19:00	
EPA 6020B	Chromium	0.0012J	mg/L	0.010	09/23/20 19:00	
EPA 6020B	Lead	0.00021J	mg/L	0.0050	09/23/20 19:00	
EPA 6020B	Lithium	0.014J	mg/L	0.030	09/23/20 19:00	
EPA 6020B	Molybdenum	0.0019J	mg/L	0.010	09/23/20 19:00	
SM 2450C-2011	Total Dissolved Solids	270	mg/L	10.0	09/18/20 10:00	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	294	mg/L	5.0	09/28/20 15:19	
SM 2320B-2011	Alkalinity, Total as CaCO3	294	mg/L	5.0	09/28/20 15:19	M1
SM 4500-S2D-2011	Sulfide	0.11	mg/L	0.10	09/22/20 14:17	
EPA 300.0 Rev 2.1 1993	Chloride	7.2	mg/L	1.0	09/19/20 21:51	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900010	HGWA-44D					
EPA 300.0 Rev 2.1 1993	Fluoride	0.52	mg/L	0.10	09/19/20 21:51	
EPA 300.0 Rev 2.1 1993	Sulfate	6.9	mg/L	1.0	09/19/20 21:51	
92495900011	HGWC-15					
	pH	6.11	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	188	mg/L	1.0	09/25/20 19:30	
EPA 6010D	Iron	0.017J	mg/L	0.040	09/25/20 19:30	
EPA 6010D	Magnesium	30.3	mg/L	0.050	09/25/20 19:30	
EPA 6010D	Manganese	18.2	mg/L	0.40	09/28/20 21:58	
EPA 6010D	Potassium	1.0	mg/L	0.20	09/25/20 19:30	
EPA 6010D	Sodium	12.1	mg/L	1.0	09/25/20 19:30	
EPA 6020B	Barium	0.017	mg/L	0.010	09/28/20 17:34	
EPA 6020B	Boron	2.2	mg/L	1.0	09/30/20 10:38	
EPA 6020B	Cadmium	0.0016J	mg/L	0.0025	09/28/20 17:34	
EPA 6020B	Cobalt	0.026	mg/L	0.0050	09/28/20 17:34	
EPA 6020B	Lithium	0.0094J	mg/L	0.030	09/28/20 17:34	
SM 2450C-2011	Total Dissolved Solids	956	mg/L	20.0	09/22/20 14:21	MW
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	92.0	mg/L	5.0	09/24/20 18:03	
SM 2320B-2011	Alkalinity, Total as CaCO3	92.0	mg/L	5.0	09/24/20 18:03	
EPA 300.0 Rev 2.1 1993	Chloride	108	mg/L	9.0	09/22/20 17:41	
EPA 300.0 Rev 2.1 1993	Sulfate	416	mg/L	9.0	09/22/20 17:41	
92495900012	HGWC-16					
	pH	7.11	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	190	mg/L	1.0	09/25/20 19:35	
EPA 6010D	Iron	1.0	mg/L	0.040	09/25/20 19:35	
EPA 6010D	Magnesium	15.4	mg/L	0.050	09/25/20 19:35	
EPA 6010D	Manganese	0.036J	mg/L	0.040	09/25/20 19:35	
EPA 6010D	Potassium	0.92	mg/L	0.20	09/25/20 19:35	
EPA 6010D	Sodium	9.9	mg/L	1.0	09/25/20 19:35	
EPA 6020B	Barium	0.11	mg/L	0.010	09/28/20 17:40	
EPA 6020B	Boron	2.4	mg/L	1.0	09/30/20 10:44	
EPA 6020B	Lead	0.000078J	mg/L	0.0050	09/28/20 17:40	
EPA 6020B	Lithium	0.0043J	mg/L	0.030	09/28/20 17:40	
SM 2450C-2011	Total Dissolved Solids	804	mg/L	20.0	09/22/20 14:22	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	213	mg/L	5.0	09/24/20 18:12	
SM 2320B-2011	Alkalinity, Total as CaCO3	213	mg/L	5.0	09/24/20 18:12	
EPA 300.0 Rev 2.1 1993	Chloride	99.3	mg/L	1.0	09/22/20 10:02	
EPA 300.0 Rev 2.1 1993	Sulfate	254	mg/L	5.0	09/22/20 17:56	
92495900013	MW-22					
	pH	5.66	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	203	mg/L	1.0	09/25/20 19:39	
EPA 6010D	Iron	0.026J	mg/L	0.040	09/25/20 19:39	
EPA 6010D	Magnesium	42.6	mg/L	0.050	09/25/20 19:39	
EPA 6010D	Manganese	17.6	mg/L	0.40	09/28/20 22:02	
EPA 6010D	Potassium	0.87	mg/L	0.20	09/25/20 19:39	
EPA 6010D	Sodium	13.9	mg/L	1.0	09/25/20 19:39	
EPA 6020B	Barium	0.020	mg/L	0.010	09/28/20 17:45	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900013	MW-22					
EPA 6020B	Beryllium	0.000047J	mg/L	0.0030	09/28/20 17:45	
EPA 6020B	Boron	2.3	mg/L	1.0	09/30/20 10:50	
EPA 6020B	Cadmium	0.0021J	mg/L	0.0025	09/28/20 17:45	
EPA 6020B	Cobalt	0.029	mg/L	0.0050	09/28/20 17:45	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	09/28/20 17:45	
EPA 6020B	Selenium	0.0020J	mg/L	0.010	09/28/20 17:45	
SM 2450C-2011	Total Dissolved Solids	1090	mg/L	20.0	09/22/20 14:22	MW
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	61.4	mg/L	5.0	09/24/20 18:24	
SM 2320B-2011	Alkalinity, Total as CaCO3	61.4	mg/L	5.0	09/24/20 18:24	
EPA 300.0 Rev 2.1 1993	Chloride	153	mg/L	10.0	09/22/20 18:10	
EPA 300.0 Rev 2.1 1993	Sulfate	468	mg/L	10.0	09/22/20 18:10	
92495900014	MW-23D					
	pH	6.71	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	361	mg/L	10.0	09/28/20 22:07	
EPA 6010D	Iron	0.34	mg/L	0.040	09/25/20 19:44	
EPA 6010D	Magnesium	31.6	mg/L	0.050	09/25/20 19:44	
EPA 6010D	Manganese	7.9	mg/L	0.040	09/25/20 19:44	
EPA 6010D	Potassium	2.3	mg/L	0.20	09/25/20 19:44	
EPA 6010D	Sodium	13.5	mg/L	1.0	09/25/20 19:44	
EPA 6020B	Barium	0.057	mg/L	0.010	09/28/20 17:51	
EPA 6020B	Boron	2.7	mg/L	1.0	09/30/20 10:56	
EPA 6020B	Cadmium	0.00060J	mg/L	0.0025	09/28/20 17:51	
EPA 6020B	Cobalt	0.00096J	mg/L	0.0050	09/28/20 17:51	
EPA 6020B	Lead	0.00016J	mg/L	0.0050	09/28/20 17:51	
EPA 6020B	Lithium	0.0021J	mg/L	0.030	09/28/20 17:51	
EPA 6020B	Molybdenum	0.0026J	mg/L	0.010	09/28/20 17:51	
SM 2450C-2011	Total Dissolved Solids	1360	mg/L	40.0	09/22/20 14:22	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	249	mg/L	5.0	09/28/20 15:58	
SM 2320B-2011	Alkalinity, Total as CaCO3	249	mg/L	5.0	09/28/20 15:58	
EPA 300.0 Rev 2.1 1993	Chloride	171	mg/L	10.0	09/22/20 18:25	
EPA 300.0 Rev 2.1 1993	Sulfate	490	mg/L	10.0	09/22/20 18:25	
92495900015	HGWA-42D					
	pH	7.62	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	43.8	mg/L	1.0	09/25/20 19:48	
EPA 6010D	Iron	0.21	mg/L	0.040	09/25/20 19:48	
EPA 6010D	Magnesium	5.9	mg/L	0.050	09/25/20 19:48	
EPA 6010D	Manganese	0.062	mg/L	0.040	09/25/20 19:48	
EPA 6010D	Potassium	1.4	mg/L	0.20	09/25/20 19:48	
EPA 6010D	Sodium	7.9	mg/L	1.0	09/25/20 19:48	
EPA 6020B	Antimony	0.00055J	mg/L	0.0030	09/28/20 17:57	
EPA 6020B	Barium	0.13	mg/L	0.010	09/28/20 17:57	
EPA 6020B	Boron	0.098J	mg/L	0.10	09/28/20 17:57	
EPA 6020B	Lead	0.000062J	mg/L	0.0050	09/28/20 17:57	
EPA 6020B	Lithium	0.0039J	mg/L	0.030	09/28/20 17:57	
EPA 6020B	Molybdenum	0.0037J	mg/L	0.010	09/28/20 17:57	
SM 2450C-2011	Total Dissolved Solids	188	mg/L	10.0	09/22/20 14:22	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900015	HGWA-42D					
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	158	mg/L	5.0	09/24/20 18:51	
SM 2320B-2011	Alkalinity, Total as CaCO3	158	mg/L	5.0	09/24/20 18:51	
SM 4500-S2D-2011	Sulfide	0.082J	mg/L	0.10	09/22/20 14:36	
EPA 300.0 Rev 2.1 1993	Chloride	5.8	mg/L	1.0	09/22/20 11:16	
EPA 300.0 Rev 2.1 1993	Fluoride	0.20	mg/L	0.10	09/22/20 11:16	
EPA 300.0 Rev 2.1 1993	Sulfate	10.9	mg/L	1.0	09/22/20 11:16	
92495900016	FB-02					
EPA 6010D	Potassium	0.062J	mg/L	0.20	09/25/20 19:52	
EPA 6020B	Boron	0.0078J	mg/L	0.10	09/28/20 18:03	
92495900017	FD-02					
EPA 6010D	Calcium	185	mg/L	1.0	09/25/20 20:05	
EPA 6010D	Magnesium	29.8	mg/L	0.050	09/25/20 20:05	
EPA 6010D	Manganese	18.5	mg/L	0.40	09/28/20 22:11	
EPA 6010D	Potassium	1.1	mg/L	0.20	09/25/20 20:05	
EPA 6010D	Sodium	11.9	mg/L	1.0	09/25/20 20:05	
EPA 6020B	Barium	0.017	mg/L	0.010	09/28/20 18:21	
EPA 6020B	Boron	2.0	mg/L	1.0	09/30/20 11:01	
EPA 6020B	Cadmium	0.0015J	mg/L	0.0025	09/28/20 18:21	
EPA 6020B	Cobalt	0.027	mg/L	0.0050	09/28/20 18:21	
EPA 6020B	Lithium	0.0080J	mg/L	0.030	09/28/20 18:21	
SM 2450C-2011	Total Dissolved Solids	956	mg/L	20.0	09/22/20 14:22	MW
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	89.8	mg/L	5.0	09/24/20 19:05	
SM 2320B-2011	Alkalinity, Total as CaCO3	89.8	mg/L	5.0	09/24/20 19:05	
EPA 300.0 Rev 2.1 1993	Chloride	107	mg/L	9.0	09/22/20 18:40	
EPA 300.0 Rev 2.1 1993	Fluoride	0.050J	mg/L	0.10	09/22/20 12:16	
EPA 300.0 Rev 2.1 1993	Sulfate	416	mg/L	9.0	09/22/20 18:40	
92495900018	HGWC-14					
	pH	4.88	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	623	mg/L	10.0	09/28/20 22:15	
EPA 6010D	Iron	0.90	mg/L	0.040	09/25/20 20:14	
EPA 6010D	Magnesium	49.2	mg/L	0.050	09/25/20 20:14	
EPA 6010D	Manganese	5.0	mg/L	0.040	09/25/20 20:14	
EPA 6010D	Potassium	12.6	mg/L	0.20	09/25/20 20:14	
EPA 6010D	Sodium	10.9	mg/L	1.0	09/25/20 20:14	
EPA 6020B	Arsenic	0.0029J	mg/L	0.0050	09/25/20 19:39	
EPA 6020B	Barium	0.019	mg/L	0.010	09/25/20 19:39	
EPA 6020B	Beryllium	0.00043J	mg/L	0.0030	09/25/20 19:39	
EPA 6020B	Boron	11.0	mg/L	1.0	09/29/20 17:08	
EPA 6020B	Cobalt	0.027	mg/L	0.0050	09/25/20 19:39	
EPA 6020B	Lead	0.0012J	mg/L	0.0050	09/25/20 19:39	
EPA 6020B	Selenium	0.0045J	mg/L	0.010	09/25/20 19:39	
EPA 6020B	Thallium	0.00028J	mg/L	0.0010	09/25/20 19:39	
SM 2450C-2011	Total Dissolved Solids	2440	mg/L	50.0	09/23/20 13:16	
EPA 300.0 Rev 2.1 1993	Chloride	288	mg/L	17.0	09/25/20 10:30	
EPA 300.0 Rev 2.1 1993	Sulfate	1260	mg/L	17.0	09/25/20 10:30	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900019	MW-21D					
	pH	6.92	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	428	mg/L	10.0	09/29/20 13:39	
EPA 6010D	Iron	23.0	mg/L	0.040	09/25/20 21:37	
EPA 6010D	Magnesium	63.3	mg/L	0.050	09/25/20 21:37	
EPA 6010D	Manganese	1.4	mg/L	0.040	09/25/20 21:37	
EPA 6010D	Potassium	1.2	mg/L	0.20	09/25/20 21:37	
EPA 6010D	Sodium	15.1	mg/L	1.0	09/25/20 21:37	
EPA 6020B	Barium	0.049	mg/L	0.010	09/30/20 18:40	
EPA 6020B	Boron	5.6	mg/L	0.10	09/30/20 18:40	
EPA 6020B	Lithium	0.022J	mg/L	0.030	09/30/20 18:40	
EPA 6020B	Molybdenum	0.017	mg/L	0.010	09/30/20 18:40	
SM 2450C-2011	Total Dissolved Solids	2060	mg/L	50.0	09/24/20 10:27	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	32.8	mg/L	5.0	09/30/20 18:31	
SM 2320B-2011	Alkalinity, Total as CaCO3	32.8	mg/L	5.0	09/30/20 18:31	
EPA 300.0 Rev 2.1 1993	Chloride	236	mg/L	14.0	09/25/20 11:57	
EPA 300.0 Rev 2.1 1993	Sulfate	1010	mg/L	14.0	09/25/20 11:57	M6
92495900020	MW-33					
	pH	4.48	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	562	mg/L	10.0	09/29/20 13:43	
EPA 6010D	Iron	1.3	mg/L	0.040	09/25/20 21:41	
EPA 6010D	Magnesium	50.2	mg/L	0.050	09/25/20 21:41	
EPA 6010D	Manganese	4.5	mg/L	0.040	09/25/20 21:41	
EPA 6010D	Potassium	12.4	mg/L	0.20	09/25/20 21:41	
EPA 6010D	Sodium	10.8	mg/L	1.0	09/25/20 21:41	
EPA 6020B	Arsenic	0.0083	mg/L	0.0050	09/30/20 18:46	
EPA 6020B	Barium	0.024	mg/L	0.010	09/30/20 18:46	
EPA 6020B	Beryllium	0.00090J	mg/L	0.0030	09/30/20 18:46	
EPA 6020B	Boron	9.0	mg/L	0.10	09/30/20 18:46	
EPA 6020B	Cadmium	0.00016J	mg/L	0.0025	09/30/20 18:46	
EPA 6020B	Cobalt	0.047	mg/L	0.0050	09/30/20 18:46	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	09/30/20 18:46	
EPA 6020B	Lithium	0.00086J	mg/L	0.030	09/30/20 18:46	
EPA 6020B	Selenium	0.041	mg/L	0.010	09/30/20 18:46	
EPA 6020B	Thallium	0.00029J	mg/L	0.0010	09/30/20 18:46	
SM 2450C-2011	Total Dissolved Solids	2340	mg/L	50.0	09/24/20 10:28	
EPA 300.0 Rev 2.1 1993	Chloride	273	mg/L	18.0	09/25/20 13:08	
EPA 300.0 Rev 2.1 1993	Fluoride	0.14	mg/L	0.10	09/24/20 19:15	
EPA 300.0 Rev 2.1 1993	Sulfate	1290	mg/L	18.0	09/25/20 13:08	
92495900021	MW-35					
	pH	5.40	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	503	mg/L	10.0	09/29/20 13:47	
EPA 6010D	Iron	2.3	mg/L	0.040	09/25/20 21:46	
EPA 6010D	Magnesium	61.6	mg/L	0.050	09/25/20 21:46	
EPA 6010D	Manganese	10.8	mg/L	0.040	09/25/20 21:46	
EPA 6010D	Potassium	9.2	mg/L	0.20	09/25/20 21:46	
EPA 6010D	Sodium	11.7	mg/L	1.0	09/25/20 21:46	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900021	MW-35					
EPA 6020B	Arsenic	0.0059	mg/L	0.0050	09/30/20 18:52	
EPA 6020B	Barium	0.028	mg/L	0.010	09/30/20 18:52	
EPA 6020B	Beryllium	0.00040J	mg/L	0.0030	09/30/20 18:52	
EPA 6020B	Boron	12.3	mg/L	1.0	10/02/20 15:43	
EPA 6020B	Cadmium	0.0010J	mg/L	0.0025	09/30/20 18:52	
EPA 6020B	Chromium	0.00079J	mg/L	0.010	09/30/20 18:52	
EPA 6020B	Cobalt	0.084	mg/L	0.0050	09/30/20 18:52	
EPA 6020B	Lead	0.00099J	mg/L	0.0050	09/30/20 18:52	
EPA 6020B	Lithium	0.0036J	mg/L	0.030	09/30/20 18:52	
EPA 6020B	Selenium	0.037	mg/L	0.010	09/30/20 18:52	
SM 2450C-2011	Total Dissolved Solids	2210	mg/L	50.0	09/24/20 10:28	
EPA 300.0 Rev 2.1 1993	Chloride	257	mg/L	17.0	09/25/20 13:23	
EPA 300.0 Rev 2.1 1993	Sulfate	1220	mg/L	17.0	09/25/20 13:23	
92495900022	MW-34D					
	pH	7.05	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	556	mg/L	10.0	10/01/20 13:15	
EPA 6010D	Iron	0.023J	mg/L	0.040	09/30/20 21:54	
EPA 6010D	Magnesium	49.7	mg/L	0.050	09/30/20 21:54	
EPA 6010D	Manganese	3.7	mg/L	0.040	09/30/20 21:54	
EPA 6010D	Potassium	9.6	mg/L	0.20	09/30/20 21:54	
EPA 6010D	Sodium	15.4	mg/L	1.0	09/30/20 21:54	
EPA 6020B	Arsenic	0.0010J	mg/L	0.0050	10/01/20 16:04	
EPA 6020B	Barium	0.038	mg/L	0.010	10/01/20 16:04	
EPA 6020B	Boron	10.2	mg/L	1.0	10/07/20 12:17	
EPA 6020B	Cobalt	0.0056	mg/L	0.0050	10/01/20 16:04	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	10/01/20 16:04	
SM 2450C-2011	Total Dissolved Solids	2430	mg/L	100	09/28/20 11:54	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	94.5	mg/L	5.0	10/02/20 19:08	
SM 2320B-2011	Alkalinity, Total as CaCO3	94.5	mg/L	5.0	10/02/20 19:08	
EPA 300.0 Rev 2.1 1993	Chloride	294	mg/L	23.0	09/29/20 23:30	
EPA 300.0 Rev 2.1 1993	Sulfate	1080	mg/L	23.0	09/29/20 23:30	
92495900023	MW-36D					
	pH	7.62	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	62.1	mg/L	1.0	09/30/20 21:59	
EPA 6010D	Iron	0.62	mg/L	0.040	09/30/20 21:59	
EPA 6010D	Magnesium	7.1	mg/L	0.050	09/30/20 21:59	
EPA 6010D	Manganese	0.045	mg/L	0.040	09/30/20 21:59	
EPA 6010D	Potassium	0.44	mg/L	0.20	09/30/20 21:59	
EPA 6010D	Sodium	6.8	mg/L	1.0	09/30/20 21:59	
EPA 6020B	Barium	0.17	mg/L	0.010	10/01/20 16:10	
EPA 6020B	Boron	0.055J	mg/L	0.10	10/01/20 16:10	
EPA 6020B	Lead	0.000088J	mg/L	0.0050	10/01/20 16:10	
EPA 6020B	Lithium	0.0084J	mg/L	0.030	10/01/20 16:10	
SM 2450C-2011	Total Dissolved Solids	256	mg/L	10.0	09/28/20 11:54	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	159	mg/L	5.0	10/02/20 19:16	
SM 2320B-2011	Alkalinity, Total as CaCO3	159	mg/L	5.0	10/02/20 19:16	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495900023	MW-36D					
SM 4500-S2D-2011	Sulfide	0.055J	mg/L	0.10	09/29/20 13:25	
EPA 300.0 Rev 2.1 1993	Chloride	2.2	mg/L	1.0	09/29/20 18:12	
EPA 300.0 Rev 2.1 1993	Sulfate	56.0	mg/L	1.0	09/29/20 18:12	
92495900024	MW-37D					
	pH	7.62	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	158	mg/L	1.0	09/30/20 22:03	
EPA 6010D	Iron	0.74	mg/L	0.040	09/30/20 22:03	
EPA 6010D	Magnesium	28.1	mg/L	0.050	09/30/20 22:03	
EPA 6010D	Manganese	0.12	mg/L	0.040	09/30/20 22:03	
EPA 6010D	Potassium	1.4	mg/L	0.20	09/30/20 22:03	
EPA 6010D	Sodium	53.6	mg/L	1.0	09/30/20 22:03	
EPA 6020B	Arsenic	0.00095J	mg/L	0.0050	10/01/20 16:15	
EPA 6020B	Barium	0.14	mg/L	0.010	10/01/20 16:15	
EPA 6020B	Boron	0.12	mg/L	0.10	10/01/20 16:15	
EPA 6020B	Lead	0.000082J	mg/L	0.0050	10/01/20 16:15	
EPA 6020B	Lithium	0.031	mg/L	0.030	10/01/20 16:15	
EPA 6020B	Molybdenum	0.015	mg/L	0.010	10/01/20 16:15	
SM 2450C-2011	Total Dissolved Solids	894	mg/L	20.0	09/28/20 11:54	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	133	mg/L	5.0	10/02/20 19:26	
SM 2320B-2011	Alkalinity, Total as CaCO3	133	mg/L	5.0	10/02/20 19:26	
SM 4500-S2D-2011	Sulfide	0.26	mg/L	0.10	09/29/20 13:25	
EPA 300.0 Rev 2.1 1993	Chloride	166	mg/L	6.0	09/29/20 23:44	
EPA 300.0 Rev 2.1 1993	Fluoride	0.065J	mg/L	0.10	09/29/20 18:26	
EPA 300.0 Rev 2.1 1993	Sulfate	256	mg/L	6.0	09/29/20 23:44	
92495900025	MW-34D FILTERED					
	pH	7.05	Std. Units		09/25/20 09:56	
EPA 6010D	Calcium	616	mg/L	10.0	10/01/20 13:19	
EPA 6010D	Iron	2.0	mg/L	0.040	09/30/20 22:08	
EPA 6010D	Magnesium	53.6	mg/L	0.050	09/30/20 22:08	
EPA 6010D	Manganese	4.1	mg/L	0.040	09/30/20 22:08	
EPA 6010D	Potassium	10.6	mg/L	0.20	09/30/20 22:08	
EPA 6010D	Sodium	16.8	mg/L	1.0	09/30/20 22:08	
EPA 6020B	Arsenic	0.0017J	mg/L	0.0050	10/01/20 16:21	
EPA 6020B	Barium	0.044	mg/L	0.010	10/01/20 16:21	
EPA 6020B	Beryllium	0.00018J	mg/L	0.0030	10/01/20 16:21	
EPA 6020B	Boron	9.8	mg/L	1.0	10/05/20 13:54	
EPA 6020B	Cadmium	0.00019J	mg/L	0.0025	10/01/20 16:21	
EPA 6020B	Chromium	0.0027J	mg/L	0.010	10/01/20 16:21	
EPA 6020B	Cobalt	0.0070	mg/L	0.0050	10/01/20 16:21	
EPA 6020B	Lead	0.0010J	mg/L	0.0050	10/01/20 16:21	
EPA 6020B	Lithium	0.0024J	mg/L	0.030	10/01/20 16:21	
SM 2450C-2011	Total Dissolved Solids	2550	mg/L	100	09/28/20 11:54	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	119	mg/L	5.0	10/02/20 19:36	
SM 2320B-2011	Alkalinity, Total as CaCO3	119	mg/L	5.0	10/02/20 19:36	
SM 4500-S2D-2011	Sulfide	0.086J	mg/L	0.10	09/29/20 13:27	
EPA 300.0 Rev 2.1 1993	Chloride	295	mg/L	22.0	09/29/20 16:35	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495900025	MW-34D FILTERED					
EPA 300.0 Rev 2.1 1993	Fluoride	0.086J	mg/L	0.10	09/29/20 02:08	
EPA 300.0 Rev 2.1 1993	Sulfate	1100	mg/L	22.0	09/29/20 16:35	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWA-1 Lab ID: 92495900001 Collected: 09/15/20 14:01 Received: 09/16/20 11:14 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.15	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	103	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 17:49	7440-70-2	
Iron	0.087	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 17:49	7439-89-6	
Magnesium	4.3	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 17:49	7439-95-4	
Manganese	0.18	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 17:49	7439-96-5	
Potassium	0.34	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 17:49	7440-09-7	B
Sodium	21.1	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 17:49	7440-23-5	
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	09/22/20 20:07	09/23/20 17:15	7440-38-2	
Barium	0.035	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 17:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 17:15	7440-41-7	
Boron	0.017J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 17:15	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 17:15	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 17:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 17:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 17:15	7439-92-1	
Lithium	0.00087J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 17:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 17:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 17:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 17:15	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	265	mg/L	10.0	10.0	1		09/17/20 15:18		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	307	mg/L	5.0	5.0	1		09/24/20 19:36		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 19:36		
Alkalinity, Total as CaCO ₃	307	mg/L	5.0	5.0	1		09/24/20 19:36		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:10	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	13.4	mg/L	1.0	0.60	1		09/18/20 21:31	16887-00-6	
Fluoride	0.082J	mg/L	0.10	0.050	1		09/18/20 21:31	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: HGWA-1									
Lab ID: 92495900001									
Collected: 09/15/20 14:01									
Received: 09/16/20 11:14									
Matrix: Water									
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	47.3	mg/L	1.0	0.50	1		09/18/20 21:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWA-2		Lab ID: 92495900002		Collected: 09/15/20 10:58		Received: 09/16/20 11:14		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.22	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	21.1	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 17:53	7440-70-2	
Iron	0.78	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 17:53	7439-89-6	
Magnesium	2.5	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 17:53	7439-95-4	
Manganese	0.61	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 17:53	7439-96-5	
Potassium	0.89	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 17:53	7440-09-7	B
Sodium	7.4	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 17:53	7440-23-5	
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	09/22/20 20:07	09/23/20 17:21	7440-38-2	
Barium	0.12	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 17:21	7440-39-3	
Beryllium	0.00013J	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 17:21	7440-41-7	
Boron	0.044J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 17:21	7440-42-8	
Cadmium	0.00012J	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 17:21	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 17:21	7440-47-3	
Cobalt	0.021	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 17:21	7440-48-4	
Lead	0.000080J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 17:21	7439-92-1	
Lithium	0.0015J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 17:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 17:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 17:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 17:21	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	124	mg/L	10.0	10.0	1		09/17/20 15:18		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	26.1	mg/L	5.0	5.0	1		09/24/20 13:36		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 13:36		
Alkalinity, Total as CaCO ₃	26.1	mg/L	5.0	5.0	1		09/24/20 13:36		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:11	18496-25-8	M1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	5.0	mg/L	1.0	0.60	1		09/18/20 21:46	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/18/20 21:46	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: HGWA-2 Lab ID: 92495900002 Collected: 09/15/20 10:58 Received: 09/16/20 11:14 Matrix: Water									
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	51.5	mg/L	1.0	0.50	1		09/18/20 21:46	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWA-3 **Lab ID: 92495900003** Collected: 09/15/20 11:45 Received: 09/16/20 11:14 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	7.29	Std. Units			1		09/25/20 09:56		
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6010D ATL ICP

Analytical Method: EPA 6010D Preparation Method: EPA 3010A
Pace Analytical Services - Peachtree Corners, GA

Calcium	73.1	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 17:57	7440-70-2	
Iron	0.26	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 17:57	7439-89-6	
Magnesium	4.6	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 17:57	7439-95-4	
Manganese	0.22	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 17:57	7439-96-5	
Potassium	0.46	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 17:57	7440-09-7	B
Sodium	4.9	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 17:57	7440-23-5	

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	09/22/20 20:07	09/23/20 17:27	7440-38-2	
Barium	0.12	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 17:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 17:27	7440-41-7	
Boron	0.0071J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 17:27	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 17:27	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 17:27	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 17:27	7440-48-4	
Lead	0.000042J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 17:27	7439-92-1	
Lithium	0.0026J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 17:27	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 17:27	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 17:27	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 17:27	7440-28-0	

2540C Total Dissolved Solids

Analytical Method: SM 2450C-2011
Pace Analytical Services - Peachtree Corners, GA

Total Dissolved Solids	258	mg/L	10.0	10.0	1		09/17/20 15:19		
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2320B Alkalinity

Analytical Method: SM 2320B-2011
Pace Analytical Services - Asheville

Alkalinity, Bicarbonate (CaCO ₃)	187	mg/L	5.0	5.0	1		09/24/20 13:43		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 13:43		
Alkalinity, Total as CaCO ₃	187	mg/L	5.0	5.0	1		09/24/20 13:43		

4500S2D Sulfide Water

Analytical Method: SM 4500-S2D-2011
Pace Analytical Services - Asheville

Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:13	18496-25-8	
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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		09/18/20 22:01	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/18/20 22:01	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: HGWA-3									
Lab ID: 92495900003									
Collected: 09/15/20 11:45									
Received: 09/16/20 11:14									
Matrix: Water									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	44.7	mg/L	1.0	0.50	1		09/18/20 22:01	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWA-4		Lab ID: 92495900004		Collected: 09/15/20 14:35		Received: 09/16/20 11:14		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.75	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	20.4	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 18:02	7440-70-2	M1
Iron	0.028J	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 18:02	7439-89-6	
Magnesium	0.88	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 18:02	7439-95-4	
Manganese	0.0083J	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 18:02	7439-96-5	
Potassium	0.28	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 18:02	7440-09-7	B
Sodium	7.7	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 18:02	7440-23-5	
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	09/22/20 20:07	09/23/20 17:51	7440-38-2	
Barium	0.024	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 17:51	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 17:51	7440-41-7	
Boron	0.013J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 17:51	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 17:51	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 17:51	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 17:51	7440-48-4	
Lead	0.000049J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 17:51	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 17:51	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 17:51	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 17:51	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 17:51	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	93.0	mg/L	10.0	10.0	1		09/17/20 15:19		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	70.2	mg/L	5.0	5.0	1		09/24/20 13:54		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 13:54		
Alkalinity, Total as CaCO ₃	70.2	mg/L	5.0	5.0	1		09/24/20 13:54		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:14	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	3.3	mg/L	1.0	0.60	1		09/18/20 22:46	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/18/20 22:46	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWA-4		Lab ID: 92495900004		Collected: 09/15/20 14:35	Received: 09/16/20 11:14	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	ND	mg/L	1.0	0.50	1		09/18/20 22:46	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWA-5		Lab ID: 92495900005		Collected: 09/15/20 10:54		Received: 09/16/20 11:14		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.33	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	27.9	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 18:27	7440-70-2	
Iron	1.6	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 18:27	7439-89-6	
Magnesium	5.3	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 18:27	7439-95-4	
Manganese	0.071	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 18:27	7439-96-5	
Potassium	0.72	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 18:27	7440-09-7	B
Sodium	5.7	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 18:27	7440-23-5	
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	09/22/20 20:07	09/23/20 18:14	7440-38-2	
Barium	0.045	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 18:14	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 18:14	7440-41-7	
Boron	0.012J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 18:14	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 18:14	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 18:14	7440-47-3	
Cobalt	0.00047J	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 18:14	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 18:14	7439-92-1	
Lithium	0.0030J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 18:14	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 18:14	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 18:14	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 18:14	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	116	mg/L	10.0	10.0	1		09/17/20 15:19		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	94.0	mg/L	5.0	5.0	1		09/24/20 14:02		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 14:02		
Alkalinity, Total as CaCO ₃	94.0	mg/L	5.0	5.0	1		09/24/20 14:02		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:15	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	1.7	mg/L	1.0	0.60	1		09/18/20 23:01	16887-00-6	
Fluoride	0.061J	mg/L	0.10	0.050	1		09/18/20 23:01	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: HGWA-5									
Lab ID: 92495900005									
Collected: 09/15/20 10:54									
Received: 09/16/20 11:14									
Matrix: Water									
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	21.2	mg/L	1.0	0.50	1		09/18/20 23:01	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWA-6 **Lab ID: 92495900006** Collected: 09/15/20 12:40 Received: 09/16/20 11:14 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.37	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	49.9	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 18:32	7440-70-2	
Iron	0.32	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 18:32	7439-89-6	
Magnesium	9.0	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 18:32	7439-95-4	
Manganese	0.071	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 18:32	7439-96-5	
Potassium	0.61	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 18:32	7440-09-7	B
Sodium	6.8	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 18:32	7440-23-5	
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	09/22/20 20:07	09/23/20 18:31	7440-38-2	
Barium	0.19	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 18:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 18:31	7440-41-7	
Boron	0.016J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 18:31	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 18:31	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 18:31	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 18:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 18:31	7439-92-1	
Lithium	0.0095J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 18:31	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 18:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 18:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 18:31	7440-28-0	
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		09/17/20 15:19		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	166	mg/L	5.0	5.0	1		09/24/20 14:10		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		09/24/20 14:10		
Alkalinity, Total as CaCO3	166	mg/L	5.0	5.0	1		09/24/20 14:10		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:15	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	1.2	mg/L	1.0	0.60	1		09/18/20 23:16	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/18/20 23:16	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWA-6		Lab ID: 92495900006		Collected: 09/15/20 12:40	Received: 09/16/20 11:14	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	35.3	mg/L	1.0	0.50	1		09/18/20 23:16	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWC-18	Lab ID: 92495900007	Collected: 09/15/20 16:17		Received: 09/16/20 11:14		Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.47	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	430	mg/L	10.0	0.70	10	09/22/20 20:12	09/30/20 13:56	7440-70-2	
Iron	0.82	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 18:36	7439-89-6	
Magnesium	47.0	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 18:36	7439-95-4	
Manganese	3.4	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 18:36	7439-96-5	
Potassium	10.3	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 18:36	7440-09-7	
Sodium	12.2	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 18:36	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0074	mg/L	0.0050	0.00078	1	09/22/20 20:07	09/23/20 18:37	7440-38-2	
Barium	0.030	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 18:37	7440-39-3	
Beryllium	0.0033	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 18:37	7440-41-7	
Boron	9.4	mg/L	1.0	0.052	10	09/22/20 20:07	09/24/20 12:24	7440-42-8	
Cadmium	0.0019J	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 18:37	7440-43-9	
Chromium	0.00063J	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 18:37	7440-47-3	
Cobalt	0.16	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 18:37	7440-48-4	
Lead	0.0014J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 18:37	7439-92-1	
Lithium	0.014J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 18:37	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 18:37	7439-98-7	
Selenium	0.059	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 18:37	7782-49-2	
Thallium	0.00016J	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 18:37	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	1890	mg/L	10.0	10.0	1		09/17/20 15:19		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 14:31		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 14:31		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		09/24/20 14:31		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:15	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	150	mg/L	15.0	9.0	15		09/19/20 09:40	16887-00-6	
Fluoride	0.31	mg/L	0.10	0.050	1		09/18/20 23:30	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWC-18		Lab ID: 92495900007		Collected: 09/15/20 16:17	Received: 09/16/20 11:14	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1080	mg/L	15.0	7.5	15		09/19/20 09:40	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWC-17 **Lab ID: 92495900008** Collected: 09/16/20 17:30 Received: 09/17/20 09:45 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.35	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	277	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 18:40	7440-70-2	
Iron	0.11	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 18:40	7439-89-6	
Magnesium	30.0	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 18:40	7439-95-4	
Manganese	3.3	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 18:40	7439-96-5	
Potassium	2.6	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 18:40	7440-09-7	
Sodium	13.8	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 18:40	7440-23-5	
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	09/22/20 20:07	09/23/20 18:43	7440-38-2	
Barium	0.025	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 18:43	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 18:43	7440-41-7	
Boron	6.7	mg/L	1.0	0.052	10	09/22/20 20:07	09/24/20 12:29	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 18:43	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 18:43	7440-47-3	
Cobalt	0.013	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 18:43	7440-48-4	
Lead	0.000065J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 18:43	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 18:43	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 18:43	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 18:43	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 18:43	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	1220	mg/L	10.0	10.0	1		09/18/20 10:00		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	205	mg/L	5.0	5.0	1		09/24/20 15:05		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 15:05		
Alkalinity, Total as CaCO ₃	205	mg/L	5.0	5.0	1		09/24/20 15:05		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:17	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	156	mg/L	10.0	6.0	10		09/20/20 07:13	16887-00-6	
Fluoride	0.058J	mg/L	0.10	0.050	1		09/19/20 21:21	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWC-17 Lab ID: 92495900008 Collected: 09/16/20 17:30 Received: 09/17/20 09:45 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	467	mg/L	10.0	5.0	10		09/20/20 07:13	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWA-43D Lab ID: 92495900009 Collected: 09/16/20 11:58 Received: 09/17/20 09:45 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.52	Std. Units			1		09/25/20 09:56		
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	09/22/20 20:12	09/23/20 18:49	7440-70-2	
Iron	0.020J	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 18:49	7439-89-6	
Magnesium	18.3	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 18:49	7439-95-4	
Manganese	0.010J	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 18:49	7439-96-5	
Potassium	0.97	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 18:49	7440-09-7	B
Sodium	14.0	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 18:49	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00051J	mg/L	0.0030	0.00028	1	09/22/20 20:07	09/23/20 18:54	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/22/20 20:07	09/23/20 18:54	7440-38-2	
Barium	0.26	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 18:54	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 18:54	7440-41-7	
Boron	0.061J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 18:54	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 18:54	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 18:54	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 18:54	7440-48-4	
Lead	0.000050J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 18:54	7439-92-1	
Lithium	0.0018J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 18:54	7439-93-2	
Molybdenum	0.0044J	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 18:54	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 18:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 18:54	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	10/13/20 08:00	10/13/20 12:43	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	272	mg/L	10.0	10.0	1		09/18/20 10:00		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	251	mg/L	5.0	5.0	1		09/28/20 15:11		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/28/20 15:11		
Alkalinity, Total as CaCO ₃	251	mg/L	5.0	5.0	1		09/28/20 15:11		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:17	18496-25-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWA-43D **Lab ID: 92495900009** Collected: 09/16/20 11:58 Received: 09/17/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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		09/19/20 21:36	16887-00-6	
Fluoride	0.22	mg/L	0.10	0.050	1		09/19/20 21:36	16984-48-8	
Sulfate	43.0	mg/L	1.0	0.50	1		09/19/20 21:36	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: **HGWA-44D** Lab ID: **92495900010** Collected: 09/16/20 15:18 Received: 09/17/20 09:45 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	7.83	Std. Units			1		09/25/20 09:56		
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6010D ATL ICP

Analytical Method: EPA 6010D Preparation Method: EPA 3010A
Pace Analytical Services - Peachtree Corners, GA

Calcium	30.0	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 18:53	7440-70-2	
Iron	0.42	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 18:53	7439-89-6	
Magnesium	15.1	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 18:53	7439-95-4	
Manganese	0.020J	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 18:53	7439-96-5	
Potassium	3.2	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 18:53	7440-09-7	
Sodium	50.3	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 18:53	7440-23-5	

6020 MET ICPMS

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

Antimony	0.00049J	mg/L	0.0030	0.00028	1	09/22/20 20:07	09/23/20 19:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/22/20 20:07	09/23/20 19:00	7440-38-2	
Barium	0.24	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 19:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 19:00	7440-41-7	
Boron	0.23	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 19:00	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 19:00	7440-43-9	
Chromium	0.0012J	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 19:00	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 19:00	7440-48-4	
Lead	0.00021J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 19:00	7439-92-1	
Lithium	0.014J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 19:00	7439-93-2	
Molybdenum	0.0019J	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 19:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 19:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 19:00	7440-28-0	

7470 Mercury

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

Mercury	ND	mg/L	0.00050	0.000078	1	10/13/20 08:00	10/13/20 12:45	7439-97-6	
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2540C Total Dissolved Solids

Analytical Method: SM 2450C-2011
Pace Analytical Services - Peachtree Corners, GA

Total Dissolved Solids	270	mg/L	10.0	10.0	1		09/18/20 10:00		
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2320B Alkalinity

Analytical Method: SM 2320B-2011
Pace Analytical Services - Asheville

Alkalinity,Bicarbonate (CaCO3)	294	mg/L	5.0	5.0	1		09/28/20 15:19		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		09/28/20 15:19		
Alkalinity, Total as CaCO3	294	mg/L	5.0	5.0	1		09/28/20 15:19		M1

4500S2D Sulfide Water

Analytical Method: SM 4500-S2D-2011
Pace Analytical Services - Asheville

Sulfide	0.11	mg/L	0.10	0.050	1		09/22/20 14:17	18496-25-8	
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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWA-44D **Lab ID: 92495900010** Collected: 09/16/20 15:18 Received: 09/17/20 09:45 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
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		09/19/20 21:51	16887-00-6	
Fluoride	0.52	mg/L	0.10	0.050	1		09/19/20 21:51	16984-48-8	
Sulfate	6.9	mg/L	1.0	0.50	1		09/19/20 21:51	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWC-15 Lab ID: 92495900011 Collected: 09/17/20 14:25 Received: 09/18/20 10:20 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.11	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	188	mg/L	1.0	0.070	1	09/24/20 14:17	09/25/20 19:30	7440-70-2	
Iron	0.017J	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 19:30	7439-89-6	
Magnesium	30.3	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 19:30	7439-95-4	
Manganese	18.2	mg/L	0.40	0.017	10	09/24/20 14:17	09/28/20 21:58	7439-96-5	
Potassium	1.0	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 19:30	7440-09-7	
Sodium	12.1	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 19:30	7440-23-5	
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 08:45	09/28/20 17:34	7440-38-2	
Barium	0.017	mg/L	0.010	0.00071	1	09/24/20 08:45	09/28/20 17:34	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 08:45	09/28/20 17:34	7440-41-7	
Boron	2.2	mg/L	1.0	0.052	10	09/24/20 08:45	09/30/20 10:38	7440-42-8	
Cadmium	0.0016J	mg/L	0.0025	0.00012	1	09/24/20 08:45	09/28/20 17:34	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 08:45	09/28/20 17:34	7440-47-3	
Cobalt	0.026	mg/L	0.0050	0.00038	1	09/24/20 08:45	09/28/20 17:34	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/24/20 08:45	09/28/20 17:34	7439-92-1	
Lithium	0.0094J	mg/L	0.030	0.00081	1	09/24/20 08:45	09/28/20 17:34	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/24/20 08:45	09/28/20 17:34	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/24/20 08:45	09/28/20 17:34	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 08:45	09/28/20 17:34	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	956	mg/L	20.0	20.0	1		09/22/20 14:21		MW
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	92.0	mg/L	5.0	5.0	1		09/24/20 18:03		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 18:03		
Alkalinity, Total as CaCO ₃	92.0	mg/L	5.0	5.0	1		09/24/20 18:03		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:32	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	108	mg/L	9.0	5.4	9		09/22/20 17:41	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/22/20 09:47	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWC-15		Lab ID: 92495900011		Collected: 09/17/20 14:25		Received: 09/18/20 10:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	416	mg/L	9.0	4.5	9		09/22/20 17:41	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWC-16		Lab ID: 92495900012		Collected: 09/17/20 11:52		Received: 09/18/20 10:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.11	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	190	mg/L	1.0	0.070	1	09/24/20 14:17	09/25/20 19:35	7440-70-2	
Iron	1.0	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 19:35	7439-89-6	
Magnesium	15.4	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 19:35	7439-95-4	
Manganese	0.036J	mg/L	0.040	0.0017	1	09/24/20 14:17	09/25/20 19:35	7439-96-5	
Potassium	0.92	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 19:35	7440-09-7	
Sodium	9.9	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 19:35	7440-23-5	
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 08:45	09/28/20 17:40	7440-38-2	
Barium	0.11	mg/L	0.010	0.00071	1	09/24/20 08:45	09/28/20 17:40	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 08:45	09/28/20 17:40	7440-41-7	
Boron	2.4	mg/L	1.0	0.052	10	09/24/20 08:45	09/30/20 10:44	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/24/20 08:45	09/28/20 17:40	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 08:45	09/28/20 17:40	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/24/20 08:45	09/28/20 17:40	7440-48-4	
Lead	0.000078J	mg/L	0.0050	0.000036	1	09/24/20 08:45	09/28/20 17:40	7439-92-1	
Lithium	0.0043J	mg/L	0.030	0.00081	1	09/24/20 08:45	09/28/20 17:40	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/24/20 08:45	09/28/20 17:40	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/24/20 08:45	09/28/20 17:40	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 08:45	09/28/20 17:40	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	804	mg/L	20.0	20.0	1		09/22/20 14:22		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	213	mg/L	5.0	5.0	1		09/24/20 18:12		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 18:12		
Alkalinity, Total as CaCO ₃	213	mg/L	5.0	5.0	1		09/24/20 18:12		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:34	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	99.3	mg/L	1.0	0.60	1		09/22/20 10:02	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/22/20 10:02	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWC-16		Lab ID: 92495900012		Collected: 09/17/20 11:52	Received: 09/18/20 10:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	254	mg/L	5.0	2.5	5		09/22/20 17:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: MW-22		Lab ID: 92495900013		Collected: 09/17/20 17:00		Received: 09/18/20 10:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.66	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	203	mg/L	1.0	0.070	1	09/24/20 14:17	09/25/20 19:39	7440-70-2	
Iron	0.026J	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 19:39	7439-89-6	
Magnesium	42.6	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 19:39	7439-95-4	
Manganese	17.6	mg/L	0.40	0.017	10	09/24/20 14:17	09/28/20 22:02	7439-96-5	
Potassium	0.87	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 19:39	7440-09-7	
Sodium	13.9	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 19:39	7440-23-5	
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 08:45	09/28/20 17:45	7440-38-2	
Barium	0.020	mg/L	0.010	0.00071	1	09/24/20 08:45	09/28/20 17:45	7440-39-3	
Beryllium	0.000047J	mg/L	0.0030	0.000046	1	09/24/20 08:45	09/28/20 17:45	7440-41-7	
Boron	2.3	mg/L	1.0	0.052	10	09/24/20 08:45	09/30/20 10:50	7440-42-8	
Cadmium	0.0021J	mg/L	0.0025	0.00012	1	09/24/20 08:45	09/28/20 17:45	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 08:45	09/28/20 17:45	7440-47-3	
Cobalt	0.029	mg/L	0.0050	0.00038	1	09/24/20 08:45	09/28/20 17:45	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/24/20 08:45	09/28/20 17:45	7439-92-1	
Lithium	0.0011J	mg/L	0.030	0.00081	1	09/24/20 08:45	09/28/20 17:45	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/24/20 08:45	09/28/20 17:45	7439-98-7	
Selenium	0.0020J	mg/L	0.010	0.0016	1	09/24/20 08:45	09/28/20 17:45	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 08:45	09/28/20 17:45	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	1090	mg/L	20.0	20.0	1		09/22/20 14:22		MW
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	61.4	mg/L	5.0	5.0	1		09/24/20 18:24		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 18:24		
Alkalinity, Total as CaCO ₃	61.4	mg/L	5.0	5.0	1		09/24/20 18:24		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:35	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	153	mg/L	10.0	6.0	10		09/22/20 18:10	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/22/20 10:16	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: MW-22									
Lab ID: 92495900013									
Collected: 09/17/20 17:00									
Received: 09/18/20 10:20									
Matrix: Water									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	468	mg/L	10.0	5.0	10		09/22/20 18:10	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: MW-23D **Lab ID: 92495900014** Collected: 09/17/20 17:18 Received: 09/18/20 10:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.71	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	361	mg/L	10.0	0.70	10	09/24/20 14:17	09/28/20 22:07	7440-70-2	
Iron	0.34	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 19:44	7439-89-6	
Magnesium	31.6	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 19:44	7439-95-4	
Manganese	7.9	mg/L	0.040	0.0017	1	09/24/20 14:17	09/25/20 19:44	7439-96-5	
Potassium	2.3	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 19:44	7440-09-7	
Sodium	13.5	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 19:44	7440-23-5	
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 08:45	09/28/20 17:51	7440-38-2	
Barium	0.057	mg/L	0.010	0.00071	1	09/24/20 08:45	09/28/20 17:51	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 08:45	09/28/20 17:51	7440-41-7	
Boron	2.7	mg/L	1.0	0.052	10	09/24/20 08:45	09/30/20 10:56	7440-42-8	
Cadmium	0.00060J	mg/L	0.0025	0.00012	1	09/24/20 08:45	09/28/20 17:51	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 08:45	09/28/20 17:51	7440-47-3	
Cobalt	0.00096J	mg/L	0.0050	0.00038	1	09/24/20 08:45	09/28/20 17:51	7440-48-4	
Lead	0.00016J	mg/L	0.0050	0.000036	1	09/24/20 08:45	09/28/20 17:51	7439-92-1	
Lithium	0.0021J	mg/L	0.030	0.00081	1	09/24/20 08:45	09/28/20 17:51	7439-93-2	
Molybdenum	0.0026J	mg/L	0.010	0.00069	1	09/24/20 08:45	09/28/20 17:51	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/24/20 08:45	09/28/20 17:51	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 08:45	09/28/20 17:51	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	1360	mg/L	40.0	40.0	1		09/22/20 14:22		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	249	mg/L	5.0	5.0	1		09/28/20 15:58		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		09/28/20 15:58		
Alkalinity, Total as CaCO3	249	mg/L	5.0	5.0	1		09/28/20 15:58		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:36	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	171	mg/L	10.0	6.0	10		09/22/20 18:25	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/22/20 11:01	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: MW-23D		Lab ID: 92495900014		Collected: 09/17/20 17:18	Received: 09/18/20 10:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	490	mg/L	10.0	5.0	10		09/22/20 18:25	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWA-42D Lab ID: 92495900015 Collected: 09/17/20 13:45 Received: 09/18/20 10:20 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.62	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	43.8	mg/L	1.0	0.070	1	09/24/20 14:17	09/25/20 19:48	7440-70-2	
Iron	0.21	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 19:48	7439-89-6	
Magnesium	5.9	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 19:48	7439-95-4	
Manganese	0.062	mg/L	0.040	0.0017	1	09/24/20 14:17	09/25/20 19:48	7439-96-5	
Potassium	1.4	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 19:48	7440-09-7	
Sodium	7.9	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 19:48	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00055J	mg/L	0.0030	0.00028	1	09/24/20 08:45	09/28/20 17:57	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/24/20 08:45	09/28/20 17:57	7440-38-2	
Barium	0.13	mg/L	0.010	0.00071	1	09/24/20 08:45	09/28/20 17:57	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 08:45	09/28/20 17:57	7440-41-7	
Boron	0.098J	mg/L	0.10	0.0052	1	09/24/20 08:45	09/28/20 17:57	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/24/20 08:45	09/28/20 17:57	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 08:45	09/28/20 17:57	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/24/20 08:45	09/28/20 17:57	7440-48-4	
Lead	0.000062J	mg/L	0.0050	0.000036	1	09/24/20 08:45	09/28/20 17:57	7439-92-1	
Lithium	0.0039J	mg/L	0.030	0.00081	1	09/24/20 08:45	09/28/20 17:57	7439-93-2	
Molybdenum	0.0037J	mg/L	0.010	0.00069	1	09/24/20 08:45	09/28/20 17:57	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/24/20 08:45	09/28/20 17:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 08:45	09/28/20 17:57	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	10/13/20 08:00	10/13/20 12:48	7439-97-6	
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		09/22/20 14:22		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	158	mg/L	5.0	5.0	1		09/24/20 18:51		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		09/24/20 18:51		
Alkalinity, Total as CaCO3	158	mg/L	5.0	5.0	1		09/24/20 18:51		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	0.082J	mg/L	0.10	0.050	1		09/22/20 14:36	18496-25-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWA-42D Lab ID: 92495900015 Collected: 09/17/20 13:45 Received: 09/18/20 10:20 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	5.8	mg/L	1.0	0.60	1		09/22/20 11:16	16887-00-6	
Fluoride	0.20	mg/L	0.10	0.050	1		09/22/20 11:16	16984-48-8	
Sulfate	10.9	mg/L	1.0	0.50	1		09/22/20 11:16	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: FB-02		Lab ID: 92495900016		Collected: 09/17/20 18:46		Received: 09/18/20 10:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	09/24/20 14:17	09/25/20 19:52	7440-70-2		
Iron	ND	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 19:52	7439-89-6		
Magnesium	ND	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 19:52	7439-95-4		
Manganese	ND	mg/L	0.040	0.0017	1	09/24/20 14:17	09/25/20 19:52	7439-96-5		
Potassium	0.062J	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 19:52	7440-09-7		
Sodium	ND	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 19:52	7440-23-5		
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 08:45	09/28/20 18:03	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	09/24/20 08:45	09/28/20 18:03	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	09/24/20 08:45	09/28/20 18:03	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 08:45	09/28/20 18:03	7440-41-7		
Boron	0.0078J	mg/L	0.10	0.0052	1	09/24/20 08:45	09/28/20 18:03	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	09/24/20 08:45	09/28/20 18:03	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 08:45	09/28/20 18:03	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	09/24/20 08:45	09/28/20 18:03	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	09/24/20 08:45	09/28/20 18:03	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	09/24/20 08:45	09/28/20 18:03	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	09/24/20 08:45	09/28/20 18:03	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	09/24/20 08:45	09/28/20 18:03	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 08:45	09/28/20 18:03	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	10/13/20 08:00	10/13/20 12:50	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		09/22/20 14:22			
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 19:01			
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 19:01			
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		09/24/20 19:01			
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville								
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:37	18496-25-8		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		09/22/20 11:31	16887-00-6		

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: FB-02		Lab ID: 92495900016		Collected: 09/17/20 18:46	Received: 09/18/20 10:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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		09/22/20 11:31	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		09/22/20 11:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: FD-02		Lab ID: 92495900017		Collected: 09/17/20 00:00	Received: 09/18/20 10:20	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	185	mg/L	1.0	0.070	1	09/24/20 14:17	09/25/20 20:05	7440-70-2		
Iron	ND	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 20:05	7439-89-6		
Magnesium	29.8	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 20:05	7439-95-4		
Manganese	18.5	mg/L	0.40	0.017	10	09/24/20 14:17	09/28/20 22:11	7439-96-5		
Potassium	1.1	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 20:05	7440-09-7		
Sodium	11.9	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 20:05	7440-23-5		
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 08:45	09/28/20 18:21	7440-38-2		
Barium	0.017	mg/L	0.010	0.00071	1	09/24/20 08:45	09/28/20 18:21	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 08:45	09/28/20 18:21	7440-41-7		
Boron	2.0	mg/L	1.0	0.052	10	09/24/20 08:45	09/30/20 11:01	7440-42-8		
Cadmium	0.0015J	mg/L	0.0025	0.00012	1	09/24/20 08:45	09/28/20 18:21	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 08:45	09/28/20 18:21	7440-47-3		
Cobalt	0.027	mg/L	0.0050	0.00038	1	09/24/20 08:45	09/28/20 18:21	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	09/24/20 08:45	09/28/20 18:21	7439-92-1		
Lithium	0.0080J	mg/L	0.030	0.00081	1	09/24/20 08:45	09/28/20 18:21	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	09/24/20 08:45	09/28/20 18:21	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	09/24/20 08:45	09/28/20 18:21	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	09/24/20 08:45	09/28/20 18:21	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	956	mg/L	20.0	20.0	1		09/22/20 14:22		MW	
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	89.8	mg/L	5.0	5.0	1		09/24/20 19:05			
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		09/24/20 19:05			
Alkalinity, Total as CaCO3	89.8	mg/L	5.0	5.0	1		09/24/20 19:05			
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville								
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:37	18496-25-8		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	107	mg/L	9.0	5.4	9		09/22/20 18:40	16887-00-6		
Fluoride	0.050J	mg/L	0.10	0.050	1		09/22/20 12:16	16984-48-8		
Sulfate	416	mg/L	9.0	4.5	9		09/22/20 18:40	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: HGWC-14 **Lab ID: 92495900018** Collected: 09/18/20 09:20 Received: 09/21/20 09:25 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.88	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	623	mg/L	10.0	0.70	10	09/24/20 14:17	09/28/20 22:15	7440-70-2	
Iron	0.90	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 20:14	7439-89-6	
Magnesium	49.2	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 20:14	7439-95-4	
Manganese	5.0	mg/L	0.040	0.0017	1	09/24/20 14:17	09/25/20 20:14	7439-96-5	
Potassium	12.6	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 20:14	7440-09-7	
Sodium	10.9	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 20:14	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0029J	mg/L	0.0050	0.00078	1	09/24/20 14:23	09/25/20 19:39	7440-38-2	
Barium	0.019	mg/L	0.010	0.00071	1	09/24/20 14:23	09/25/20 19:39	7440-39-3	
Beryllium	0.00043J	mg/L	0.0030	0.000046	1	09/24/20 14:23	09/25/20 19:39	7440-41-7	
Boron	11.0	mg/L	1.0	0.052	10	09/24/20 14:23	09/29/20 17:08	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/24/20 14:23	09/25/20 19:39	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 14:23	09/25/20 19:39	7440-47-3	
Cobalt	0.027	mg/L	0.0050	0.00038	1	09/24/20 14:23	09/25/20 19:39	7440-48-4	
Lead	0.0012J	mg/L	0.0050	0.000036	1	09/24/20 14:23	09/25/20 19:39	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/24/20 14:23	09/25/20 19:39	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/24/20 14:23	09/25/20 19:39	7439-98-7	
Selenium	0.0045J	mg/L	0.010	0.0016	1	09/24/20 14:23	09/25/20 19:39	7782-49-2	
Thallium	0.00028J	mg/L	0.0010	0.00014	1	09/24/20 14:23	09/25/20 19:39	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2440	mg/L	50.0	50.0	1		09/23/20 13:16		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 14:26		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 14:26		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		09/30/20 14:26		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:47	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	288	mg/L	17.0	10.2	17		09/25/20 10:30	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/24/20 10:06	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: HGWC-14		Lab ID: 92495900018		Collected: 09/18/20 09:20		Received: 09/21/20 09:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1260	mg/L	17.0	8.5	17		09/25/20 10:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: MW-21D **Lab ID: 92495900019** Collected: 09/21/20 10:30 Received: 09/22/20 09:25 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.92	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	428	mg/L	10.0	0.70	10	09/24/20 14:20	09/29/20 13:39	7440-70-2	
Iron	23.0	mg/L	0.040	0.016	1	09/24/20 14:20	09/25/20 21:37	7439-89-6	
Magnesium	63.3	mg/L	0.050	0.0076	1	09/24/20 14:20	09/25/20 21:37	7439-95-4	
Manganese	1.4	mg/L	0.040	0.0017	1	09/24/20 14:20	09/25/20 21:37	7439-96-5	
Potassium	1.2	mg/L	0.20	0.056	1	09/24/20 14:20	09/25/20 21:37	7440-09-7	
Sodium	15.1	mg/L	1.0	0.26	1	09/24/20 14:20	09/25/20 21:37	7440-23-5	
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 18:40	7440-38-2	
Barium	0.049	mg/L	0.010	0.00071	1	09/29/20 14:13	09/30/20 18:40	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/29/20 14:13	09/30/20 18:40	7440-41-7	
Boron	5.6	mg/L	0.10	0.0052	1	09/29/20 14:13	09/30/20 18:40	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/29/20 14:13	09/30/20 18:40	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/29/20 14:13	09/30/20 18:40	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/29/20 14:13	09/30/20 18:40	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/29/20 14:13	09/30/20 18:40	7439-92-1	
Lithium	0.022J	mg/L	0.030	0.00081	1	09/29/20 14:13	09/30/20 18:40	7439-93-2	
Molybdenum	0.017	mg/L	0.010	0.00069	1	09/29/20 14:13	09/30/20 18:40	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/29/20 14:13	09/30/20 18:40	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/29/20 14:13	09/30/20 18:40	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2060	mg/L	50.0	50.0	1		09/24/20 10:27		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	32.8	mg/L	5.0	5.0	1		09/30/20 18:31		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 18:31		
Alkalinity, Total as CaCO ₃	32.8	mg/L	5.0	5.0	1		09/30/20 18:31		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/24/20 11:46	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	236	mg/L	14.0	8.4	14		09/25/20 11:57	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/24/20 18:31	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: MW-21D		Lab ID: 92495900019		Collected: 09/21/20 10:30	Received: 09/22/20 09:25	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1010	mg/L	14.0	7.0	14		09/25/20 11:57	14808-79-8	M6

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: MW-33		Lab ID: 92495900020		Collected: 09/21/20 13:00		Received: 09/22/20 09:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.48	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	562	mg/L	10.0	0.70	10	09/24/20 14:20	09/29/20 13:43	7440-70-2	
Iron	1.3	mg/L	0.040	0.016	1	09/24/20 14:20	09/25/20 21:41	7439-89-6	
Magnesium	50.2	mg/L	0.050	0.0076	1	09/24/20 14:20	09/25/20 21:41	7439-95-4	
Manganese	4.5	mg/L	0.040	0.0017	1	09/24/20 14:20	09/25/20 21:41	7439-96-5	
Potassium	12.4	mg/L	0.20	0.056	1	09/24/20 14:20	09/25/20 21:41	7440-09-7	
Sodium	10.8	mg/L	1.0	0.26	1	09/24/20 14:20	09/25/20 21:41	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0083	mg/L	0.0050	0.00078	1	09/29/20 14:13	09/30/20 18:46	7440-38-2	
Barium	0.024	mg/L	0.010	0.00071	1	09/29/20 14:13	09/30/20 18:46	7440-39-3	
Beryllium	0.00090J	mg/L	0.0030	0.000046	1	09/29/20 14:13	09/30/20 18:46	7440-41-7	
Boron	9.0	mg/L	0.10	0.0052	1	09/29/20 14:13	09/30/20 18:46	7440-42-8	
Cadmium	0.00016J	mg/L	0.0025	0.00012	1	09/29/20 14:13	09/30/20 18:46	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/29/20 14:13	09/30/20 18:46	7440-47-3	
Cobalt	0.047	mg/L	0.0050	0.00038	1	09/29/20 14:13	09/30/20 18:46	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000036	1	09/29/20 14:13	09/30/20 18:46	7439-92-1	
Lithium	0.00086J	mg/L	0.030	0.00081	1	09/29/20 14:13	09/30/20 18:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/29/20 14:13	09/30/20 18:46	7439-98-7	
Selenium	0.041	mg/L	0.010	0.0016	1	09/29/20 14:13	09/30/20 18:46	7782-49-2	
Thallium	0.00029J	mg/L	0.0010	0.00014	1	09/29/20 14:13	09/30/20 18:46	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2340	mg/L	50.0	50.0	1		09/24/20 10:28		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 18:37		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 18:37		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		09/30/20 18:37		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/24/20 11:46	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	273	mg/L	18.0	10.8	18		09/25/20 13:08	16887-00-6	
Fluoride	0.14	mg/L	0.10	0.050	1		09/24/20 19:15	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: MW-33									
Lab ID: 92495900020									
Collected: 09/21/20 13:00 Received: 09/22/20 09:25 Matrix: Water									
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	1290	mg/L	18.0	9.0	18		09/25/20 13:08	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: MW-35		Lab ID: 92495900021		Collected: 09/21/20 12:55		Received: 09/22/20 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	5.40	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	503	mg/L	10.0	0.70	10	09/24/20 14:20	09/29/20 13:47	7440-70-2	
Iron	2.3	mg/L	0.040	0.016	1	09/24/20 14:20	09/25/20 21:46	7439-89-6	
Magnesium	61.6	mg/L	0.050	0.0076	1	09/24/20 14:20	09/25/20 21:46	7439-95-4	
Manganese	10.8	mg/L	0.040	0.0017	1	09/24/20 14:20	09/25/20 21:46	7439-96-5	
Potassium	9.2	mg/L	0.20	0.056	1	09/24/20 14:20	09/25/20 21:46	7440-09-7	
Sodium	11.7	mg/L	1.0	0.26	1	09/24/20 14:20	09/25/20 21:46	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0059	mg/L	0.0050	0.00078	1	09/29/20 14:13	09/30/20 18:52	7440-38-2	
Barium	0.028	mg/L	0.010	0.00071	1	09/29/20 14:13	09/30/20 18:52	7440-39-3	
Beryllium	0.00040J	mg/L	0.0030	0.000046	1	09/29/20 14:13	09/30/20 18:52	7440-41-7	
Boron	12.3	mg/L	1.0	0.052	10	09/29/20 14:13	10/02/20 15:43	7440-42-8	
Cadmium	0.0010J	mg/L	0.0025	0.00012	1	09/29/20 14:13	09/30/20 18:52	7440-43-9	
Chromium	0.00079J	mg/L	0.010	0.00055	1	09/29/20 14:13	09/30/20 18:52	7440-47-3	
Cobalt	0.084	mg/L	0.0050	0.00038	1	09/29/20 14:13	09/30/20 18:52	7440-48-4	
Lead	0.00099J	mg/L	0.0050	0.000036	1	09/29/20 14:13	09/30/20 18:52	7439-92-1	
Lithium	0.0036J	mg/L	0.030	0.00081	1	09/29/20 14:13	09/30/20 18:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/29/20 14:13	09/30/20 18:52	7439-98-7	
Selenium	0.037	mg/L	0.010	0.0016	1	09/29/20 14:13	09/30/20 18:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/29/20 14:13	09/30/20 18:52	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2210	mg/L	50.0	50.0	1		09/24/20 10:28		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 18:39		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 18:39		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		09/30/20 18:39		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/24/20 11:47	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	257	mg/L	17.0	10.2	17		09/25/20 13:23	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/24/20 19:29	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: MW-35		Lab ID: 92495900021		Collected: 09/21/20 12:55	Received: 09/22/20 09:25	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1220	mg/L	17.0	8.5	17		09/25/20 13:23	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: MW-34D **Lab ID: 92495900022** Collected: 09/23/20 16:30 Received: 09/24/20 10:25 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	7.05	Std. Units			1		09/25/20 09:56		
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6010D ATL ICP

Analytical Method: EPA 6010D Preparation Method: EPA 3010A
Pace Analytical Services - Peachtree Corners, GA

Calcium	556	mg/L	10.0	0.70	10	09/28/20 15:51	10/01/20 13:15	7440-70-2	
Iron	0.023J	mg/L	0.040	0.016	1	09/28/20 15:51	09/30/20 21:54	7439-89-6	
Magnesium	49.7	mg/L	0.050	0.0076	1	09/28/20 15:51	09/30/20 21:54	7439-95-4	
Manganese	3.7	mg/L	0.040	0.0017	1	09/28/20 15:51	09/30/20 21:54	7439-96-5	
Potassium	9.6	mg/L	0.20	0.056	1	09/28/20 15:51	09/30/20 21:54	7440-09-7	
Sodium	15.4	mg/L	1.0	0.26	1	09/28/20 15:51	09/30/20 21:54	7440-23-5	

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	09/30/20 14:00	10/01/20 16:04	7440-38-2	
Barium	0.038	mg/L	0.010	0.00071	1	09/30/20 14:00	10/01/20 16:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/30/20 14:00	10/01/20 16:04	7440-41-7	
Boron	10.2	mg/L	1.0	0.052	10	09/30/20 14:00	10/07/20 12:17	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/30/20 14:00	10/01/20 16:04	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 14:00	10/01/20 16:04	7440-47-3	
Cobalt	0.0056	mg/L	0.0050	0.00038	1	09/30/20 14:00	10/01/20 16:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/30/20 14:00	10/01/20 16:04	7439-92-1	
Lithium	0.0011J	mg/L	0.030	0.00081	1	09/30/20 14:00	10/01/20 16:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 14:00	10/01/20 16:04	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 14:00	10/01/20 16:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 14:00	10/01/20 16:04	7440-28-0	

2540C Total Dissolved Solids

Analytical Method: SM 2450C-2011
Pace Analytical Services - Peachtree Corners, GA

Total Dissolved Solids	2430	mg/L	100	100	1		09/28/20 11:54		
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2320B Alkalinity

Analytical Method: SM 2320B-2011
Pace Analytical Services - Asheville

Alkalinity, Bicarbonate (CaCO ₃)	94.5	mg/L	5.0	5.0	1		10/02/20 19:08		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/02/20 19:08		
Alkalinity, Total as CaCO ₃	94.5	mg/L	5.0	5.0	1		10/02/20 19:08		

4500S2D Sulfide Water

Analytical Method: SM 4500-S2D-2011
Pace Analytical Services - Asheville

Sulfide	ND	mg/L	0.10	0.050	1		09/29/20 13:24	18496-25-8	
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300.0 IC Anions 28 Days

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

Chloride	294	mg/L	23.0	13.8	23		09/29/20 23:30	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/29/20 17:57	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: MW-34D		Lab ID: 92495900022		Collected: 09/23/20 16:30	Received: 09/24/20 10:25	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1080	mg/L	23.0	11.5	23		09/29/20 23:30	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: MW-36D **Lab ID: 92495900023** Collected: 09/23/20 11:15 Received: 09/24/20 10:25 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	7.62	Std. Units			1		09/25/20 09:56		
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6010D ATL ICP

Analytical Method: EPA 6010D Preparation Method: EPA 3010A
Pace Analytical Services - Peachtree Corners, GA

Calcium	62.1	mg/L	1.0	0.070	1	09/28/20 15:51	09/30/20 21:59	7440-70-2	
Iron	0.62	mg/L	0.040	0.016	1	09/28/20 15:51	09/30/20 21:59	7439-89-6	
Magnesium	7.1	mg/L	0.050	0.0076	1	09/28/20 15:51	09/30/20 21:59	7439-95-4	
Manganese	0.045	mg/L	0.040	0.0017	1	09/28/20 15:51	09/30/20 21:59	7439-96-5	
Potassium	0.44	mg/L	0.20	0.056	1	09/28/20 15:51	09/30/20 21:59	7440-09-7	
Sodium	6.8	mg/L	1.0	0.26	1	09/28/20 15:51	09/30/20 21:59	7440-23-5	

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 16:10	7440-38-2	
Barium	0.17	mg/L	0.010	0.00071	1	09/30/20 14:00	10/01/20 16:10	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/30/20 14:00	10/01/20 16:10	7440-41-7	
Boron	0.055J	mg/L	0.10	0.0052	1	09/30/20 14:00	10/01/20 16:10	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/30/20 14:00	10/01/20 16:10	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 14:00	10/01/20 16:10	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/30/20 14:00	10/01/20 16:10	7440-48-4	
Lead	0.000088J	mg/L	0.0050	0.000036	1	09/30/20 14:00	10/01/20 16:10	7439-92-1	
Lithium	0.0084J	mg/L	0.030	0.00081	1	09/30/20 14:00	10/01/20 16:10	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 14:00	10/01/20 16:10	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 14:00	10/01/20 16:10	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 14:00	10/01/20 16:10	7440-28-0	

2540C Total Dissolved Solids

Analytical Method: SM 2450C-2011
Pace Analytical Services - Peachtree Corners, GA

Total Dissolved Solids	256	mg/L	10.0	10.0	1		09/28/20 11:54		
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2320B Alkalinity

Analytical Method: SM 2320B-2011
Pace Analytical Services - Asheville

Alkalinity, Bicarbonate (CaCO ₃)	159	mg/L	5.0	5.0	1		10/02/20 19:16		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/02/20 19:16		
Alkalinity, Total as CaCO ₃	159	mg/L	5.0	5.0	1		10/02/20 19:16		

4500S2D Sulfide Water

Analytical Method: SM 4500-S2D-2011
Pace Analytical Services - Asheville

Sulfide	0.055J	mg/L	0.10	0.050	1		09/29/20 13:25	18496-25-8	
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300.0 IC Anions 28 Days

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

Chloride	2.2	mg/L	1.0	0.60	1		09/29/20 18:12	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/29/20 18:12	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: MW-36D Lab ID: 92495900023 Collected: 09/23/20 11:15 Received: 09/24/20 10:25 Matrix: Water									
300.0 IC Anions 28 Days Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Sulfate	56.0	mg/L	1.0	0.50	1		09/29/20 18:12	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: MW-37D **Lab ID: 92495900024** Collected: 09/23/20 08:50 Received: 09/24/20 10:25 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.62	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	158	mg/L	1.0	0.070	1	09/28/20 15:51	09/30/20 22:03	7440-70-2	
Iron	0.74	mg/L	0.040	0.016	1	09/28/20 15:51	09/30/20 22:03	7439-89-6	
Magnesium	28.1	mg/L	0.050	0.0076	1	09/28/20 15:51	09/30/20 22:03	7439-95-4	
Manganese	0.12	mg/L	0.040	0.0017	1	09/28/20 15:51	09/30/20 22:03	7439-96-5	
Potassium	1.4	mg/L	0.20	0.056	1	09/28/20 15:51	09/30/20 22:03	7440-09-7	
Sodium	53.6	mg/L	1.0	0.26	1	09/28/20 15:51	09/30/20 22:03	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.00095J	mg/L	0.0050	0.00078	1	09/30/20 14:00	10/01/20 16:15	7440-38-2	
Barium	0.14	mg/L	0.010	0.00071	1	09/30/20 14:00	10/01/20 16:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/30/20 14:00	10/01/20 16:15	7440-41-7	
Boron	0.12	mg/L	0.10	0.0052	1	09/30/20 14:00	10/01/20 16:15	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/30/20 14:00	10/01/20 16:15	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/30/20 14:00	10/01/20 16:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/30/20 14:00	10/01/20 16:15	7440-48-4	
Lead	0.000082J	mg/L	0.0050	0.000036	1	09/30/20 14:00	10/01/20 16:15	7439-92-1	
Lithium	0.031	mg/L	0.030	0.00081	1	09/30/20 14:00	10/01/20 16:15	7439-93-2	
Molybdenum	0.015	mg/L	0.010	0.00069	1	09/30/20 14:00	10/01/20 16:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 14:00	10/01/20 16:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 14:00	10/01/20 16:15	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	894	mg/L	20.0	20.0	1		09/28/20 11:54		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	133	mg/L	5.0	5.0	1		10/02/20 19:26		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/02/20 19:26		
Alkalinity, Total as CaCO ₃	133	mg/L	5.0	5.0	1		10/02/20 19:26		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	0.26	mg/L	0.10	0.050	1		09/29/20 13:25	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	166	mg/L	6.0	3.6	6		09/29/20 23:44	16887-00-6	
Fluoride	0.065J	mg/L	0.10	0.050	1		09/29/20 18:26	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Sample: MW-37D		Lab ID: 92495900024		Collected: 09/23/20 08:50	Received: 09/24/20 10:25	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Sulfate	256	mg/L	6.0	3.0	6		09/29/20 23:44	14808-79-8		

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Sample: MW-34D FILTERED **Lab ID: 92495900025** Collected: 09/23/20 17:00 Received: 09/24/20 10:25 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.05	Std. Units			1		09/25/20 09:56		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	616	mg/L	10.0	0.70	10	09/28/20 15:51	10/01/20 13:19	7440-70-2	
Iron	2.0	mg/L	0.040	0.016	1	09/28/20 15:51	09/30/20 22:08	7439-89-6	
Magnesium	53.6	mg/L	0.050	0.0076	1	09/28/20 15:51	09/30/20 22:08	7439-95-4	
Manganese	4.1	mg/L	0.040	0.0017	1	09/28/20 15:51	09/30/20 22:08	7439-96-5	
Potassium	10.6	mg/L	0.20	0.056	1	09/28/20 15:51	09/30/20 22:08	7440-09-7	
Sodium	16.8	mg/L	1.0	0.26	1	09/28/20 15:51	09/30/20 22:08	7440-23-5	
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	09/30/20 14:00	10/01/20 16:21	7440-38-2	
Barium	0.044	mg/L	0.010	0.00071	1	09/30/20 14:00	10/01/20 16:21	7440-39-3	
Beryllium	0.00018J	mg/L	0.0030	0.000046	1	09/30/20 14:00	10/01/20 16:21	7440-41-7	
Boron	9.8	mg/L	1.0	0.052	10	09/30/20 14:00	10/05/20 13:54	7440-42-8	
Cadmium	0.00019J	mg/L	0.0025	0.00012	1	09/30/20 14:00	10/01/20 16:21	7440-43-9	
Chromium	0.0027J	mg/L	0.010	0.00055	1	09/30/20 14:00	10/01/20 16:21	7440-47-3	
Cobalt	0.0070	mg/L	0.0050	0.00038	1	09/30/20 14:00	10/01/20 16:21	7440-48-4	
Lead	0.0010J	mg/L	0.0050	0.000036	1	09/30/20 14:00	10/01/20 16:21	7439-92-1	
Lithium	0.0024J	mg/L	0.030	0.00081	1	09/30/20 14:00	10/01/20 16:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/30/20 14:00	10/01/20 16:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/30/20 14:00	10/01/20 16:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/30/20 14:00	10/01/20 16:21	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2550	mg/L	100	100	1		09/28/20 11:54		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	119	mg/L	5.0	5.0	1		10/02/20 19:36		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/02/20 19:36		
Alkalinity, Total as CaCO3	119	mg/L	5.0	5.0	1		10/02/20 19:36		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	0.086J	mg/L	0.10	0.050	1		09/29/20 13:27	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	295	mg/L	22.0	13.2	22		09/29/20 16:35	16887-00-6	
Fluoride	0.086J	mg/L	0.10	0.050	1		09/29/20 02:08	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: MW-34D FILTERED Lab ID: 92495900025 Collected: 09/23/20 17:00 Received: 09/24/20 10:25 Matrix: Water									
300.0 IC Anions 28 Days Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Sulfate	1100	mg/L	22.0	11.0	22		09/29/20 16:35	14808-79-8	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568201 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007, 92495900008, 92495900009, 92495900010

METHOD BLANK: 3010803 Matrix: Water
Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007, 92495900008, 92495900009, 92495900010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/23/20 17:40	
Iron	mg/L	ND	0.040	0.016	09/23/20 17:40	
Magnesium	mg/L	ND	0.050	0.0076	09/23/20 17:40	
Manganese	mg/L	ND	0.040	0.0017	09/23/20 17:40	
Potassium	mg/L	0.14J	0.20	0.056	09/23/20 17:40	
Sodium	mg/L	ND	1.0	0.26	09/23/20 17:40	

LABORATORY CONTROL SAMPLE: 3010804

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.96J	96	80-120	
Iron	mg/L	1	0.97	97	80-120	
Magnesium	mg/L	1	0.99	99	80-120	
Manganese	mg/L	1	0.98	98	80-120	
Potassium	mg/L	1	1.1	105	80-120	
Sodium	mg/L	1	1.1	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3010805 3010806

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495900004	Spike Conc.	Spike Conc.	Result						
Calcium	mg/L	20.4	1	1	21.1	21.9	69	147	75-125	4	20 M1
Iron	mg/L	0.028J	1	1	0.96	0.97	93	95	75-125	2	20
Magnesium	mg/L	0.88	1	1	1.8	1.8	94	97	75-125	2	20
Manganese	mg/L	0.0083J	1	1	0.95	0.96	94	95	75-125	1	20
Potassium	mg/L	0.28	1	1	1.2	1.2	92	94	75-125	2	20
Sodium	mg/L	7.7	1	1	8.5	8.9	83	118	75-125	4	20

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568747 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017, 92495900018

METHOD BLANK: 3013294 Matrix: Water
Associated Lab Samples: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017, 92495900018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/25/20 18:16	
Iron	mg/L	ND	0.040	0.016	09/25/20 18:16	
Magnesium	mg/L	ND	0.050	0.0076	09/25/20 18:16	
Manganese	mg/L	ND	0.040	0.0017	09/25/20 18:16	
Potassium	mg/L	ND	0.20	0.056	09/25/20 18:16	
Sodium	mg/L	ND	1.0	0.26	09/25/20 18:16	

LABORATORY CONTROL SAMPLE: 3013295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.98J	98	80-120	
Iron	mg/L	1	0.97	97	80-120	
Magnesium	mg/L	1	1.0	100	80-120	
Manganese	mg/L	1	1.0	101	80-120	
Potassium	mg/L	1	1.0	105	80-120	
Sodium	mg/L	1	1.1	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013296 3013297

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495904004	Result	Spike Conc.	Spike Conc.								
Calcium	mg/L	75.8	1	1	74.9	75.7	-84	-9	75-125	1	20	M1	
Iron	mg/L	0.031J	1	1	0.94	0.96	91	93	75-125	2	20		
Magnesium	mg/L	5.6	1	1	6.4	6.4	81	89	75-125	1	20		
Manganese	mg/L	0.0055J	1	1	0.95	0.97	94	97	75-125	3	20		
Potassium	mg/L	0.90	1	1	1.8	1.9	93	99	75-125	3	20		
Sodium	mg/L	7.1	1	1	8.0	8.0	82	87	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

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: 92495900019, 92495900020, 92495900021

METHOD BLANK: 3013298 Matrix: Water

Associated Lab Samples: 92495900019, 92495900020, 92495900021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/25/20 20:40	
Iron	mg/L	ND	0.040	0.016	09/25/20 20:40	
Magnesium	mg/L	ND	0.050	0.0076	09/25/20 20:40	
Manganese	mg/L	ND	0.040	0.0017	09/25/20 20:40	
Potassium	mg/L	0.12J	0.20	0.056	09/25/20 20:40	
Sodium	mg/L	ND	1.0	0.26	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	
Iron	mg/L	1	0.93	93	80-120	
Magnesium	mg/L	1	0.95	95	80-120	
Manganese	mg/L	1	0.96	96	80-120	
Potassium	mg/L	1	1.1	107	80-120	
Sodium	mg/L	1	1.1	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013300 3013301

Parameter	Units	3013300		3013301		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	75.3	1	79.7	76.2	438	83	75-125	5	20	M1
Iron	mg/L	ND	1	0.96	0.93	95	92	75-125	3	20	
Magnesium	mg/L	8.6	1	10	9.5	138	94	75-125	4	20	M1
Manganese	mg/L	0.0077J	1	0.99	0.96	98	95	75-125	3	20	
Potassium	mg/L	0.91	1	2.0	2.0	110	110	75-125	0	20	
Sodium	mg/L	8.4	1	9.8	9.4	137	92	75-125	5	20	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

QC Batch:	569461	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D ATL
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92495900022, 92495900023, 92495900024, 92495900025

METHOD BLANK: 3017167 Matrix: Water
Associated Lab Samples: 92495900022, 92495900023, 92495900024, 92495900025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/30/20 20:54	
Iron	mg/L	ND	0.040	0.016	09/30/20 20:54	
Magnesium	mg/L	ND	0.050	0.0076	09/30/20 20:54	
Manganese	mg/L	ND	0.040	0.0017	09/30/20 20:54	
Potassium	mg/L	ND	0.20	0.056	09/30/20 20:54	
Sodium	mg/L	ND	1.0	0.26	09/30/20 20:54	

LABORATORY CONTROL SAMPLE: 3017168

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.94J	94	80-120	
Iron	mg/L	1	0.97	97	80-120	
Magnesium	mg/L	1	0.97	97	80-120	
Manganese	mg/L	1	0.93	93	80-120	
Potassium	mg/L	1	0.95	95	80-120	
Sodium	mg/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017169 3017170

Parameter	Units	3017169		3017170		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	1.8	1	2.8	2.8	94	95	75-125	1	20	
Iron	mg/L	0.050	1	1.0	1.0	99	100	75-125	1	20	
Magnesium	mg/L	1.4	1	2.4	2.4	97	100	75-125	1	20	
Manganese	mg/L	0.014J	1	0.97	0.96	95	95	75-125	0	20	
Potassium	mg/L	2.2	1	3.2	3.2	97	94	75-125	1	20	
Sodium	mg/L	5.8	1	6.8	6.8	104	104	75-125	0	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568198 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007, 92495900008, 92495900009, 92495900010

METHOD BLANK: 3010799 Matrix: Water
Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007, 92495900008, 92495900009, 92495900010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/23/20 17:04	
Arsenic	mg/L	ND	0.0050	0.00078	09/23/20 17:04	
Barium	mg/L	ND	0.010	0.00071	09/23/20 17:04	
Beryllium	mg/L	ND	0.0030	0.000046	09/23/20 17:04	
Boron	mg/L	ND	0.10	0.0052	09/23/20 17:04	
Cadmium	mg/L	ND	0.0025	0.00012	09/23/20 17:04	
Chromium	mg/L	ND	0.010	0.00055	09/23/20 17:04	
Cobalt	mg/L	ND	0.0050	0.00038	09/23/20 17:04	
Lead	mg/L	ND	0.0050	0.000036	09/23/20 17:04	
Lithium	mg/L	ND	0.030	0.00081	09/23/20 17:04	
Molybdenum	mg/L	ND	0.010	0.00069	09/23/20 17:04	
Selenium	mg/L	ND	0.010	0.0016	09/23/20 17:04	
Thallium	mg/L	ND	0.0010	0.00014	09/23/20 17:04	

LABORATORY CONTROL SAMPLE: 3010800

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	0.096	96	80-120	
Barium	mg/L	0.1	0.095	95	80-120	
Beryllium	mg/L	0.1	0.098	98	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	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.096	96	80-120	
Selenium	mg/L	0.1	0.090	90	80-120	
Thallium	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3010801 3010802

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495900004	Spike Conc.	Spike Conc.	Result						
Antimony	mg/L				0.10	0.10			1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameter	Units	3010801		3010802		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495900004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	mg/L	ND	0.1	0.1	0.098	0.097	97	97	75-125	1	20		
Barium	mg/L	0.024	0.1	0.1	0.12	0.12	100	100	75-125	0	20		
Beryllium	mg/L	ND	0.1	0.1	0.094	0.093	94	93	75-125	1	20		
Boron	mg/L	0.013J	1	1	0.97	0.98	96	96	75-125	0	20		
Cadmium	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	0	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20		
Cobalt	mg/L	ND	0.1	0.1	0.098	0.098	98	97	75-125	0	20		
Lead	mg/L	0.000049J	0.1	0.1	0.095	0.097	95	97	75-125	2	20		
Lithium	mg/L	ND	0.1	0.1	0.092	0.092	91	92	75-125	0	20		
Molybdenum	mg/L	ND	0.1	0.1	0.093	0.094	93	94	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.094	0.095	94	95	75-125	1	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568430 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

METHOD BLANK: 3011696 Matrix: Water
Associated Lab Samples: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/28/20 15:48	
Arsenic	mg/L	ND	0.0050	0.00078	09/28/20 15:48	
Barium	mg/L	ND	0.010	0.00071	09/28/20 15:48	
Beryllium	mg/L	ND	0.0030	0.000046	09/28/20 15:48	
Boron	mg/L	ND	0.10	0.0052	09/28/20 15:48	
Cadmium	mg/L	ND	0.0025	0.00012	09/28/20 15:48	
Chromium	mg/L	ND	0.010	0.00055	09/28/20 15:48	
Cobalt	mg/L	ND	0.0050	0.00038	09/28/20 15:48	
Lead	mg/L	ND	0.0050	0.000036	09/28/20 15:48	
Lithium	mg/L	ND	0.030	0.00081	09/28/20 15:48	
Molybdenum	mg/L	ND	0.010	0.00069	09/28/20 15:48	
Selenium	mg/L	ND	0.010	0.0016	09/28/20 15:48	
Thallium	mg/L	ND	0.0010	0.00014	09/28/20 15:48	

LABORATORY CONTROL SAMPLE: 3011697

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	0.098	98	80-120	
Barium	mg/L	0.1	0.10	100	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.1	115	80-120	
Cadmium	mg/L	0.1	0.10	101	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	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012194 3012195

Parameter	Units	92495870011 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	0.098	0.10	98	102	75-125	4	20	
Arsenic	mg/L	ND	0.1	0.1	0.095	0.099	95	99	75-125	5	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameter	Units	3012194		3012195		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Barium	mg/L	0.0079J	0.1	0.1	0.10	0.11	96	103	75-125	6	20		
Beryllium	mg/L	ND	0.1	0.1	0.099	0.10	99	102	75-125	3	20		
Boron	mg/L	0.0079J	1	1	1.1	1.2	112	116	75-125	4	20		
Cadmium	mg/L	ND	0.1	0.1	0.097	0.10	97	102	75-125	5	20		
Chromium	mg/L	ND	0.1	0.1	0.098	0.10	98	104	75-125	7	20		
Cobalt	mg/L	ND	0.1	0.1	0.096	0.10	96	101	75-125	6	20		
Lead	mg/L	ND	0.1	0.1	0.097	0.10	97	103	75-125	6	20		
Lithium	mg/L	ND	0.1	0.1	0.10	0.11	101	106	75-125	5	20		
Molybdenum	mg/L	ND	0.1	0.1	0.098	0.10	98	103	75-125	5	20		
Selenium	mg/L	ND	0.1	0.1	0.091	0.097	90	96	75-125	6	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.10	97	102	75-125	6	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

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: 92495900018

METHOD BLANK: 3013302 Matrix: Water

Associated Lab Samples: 92495900018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
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
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	3013304		3013305		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92495894014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	ND	0.1	0.1	0.10	0.11	101	106	75-125	5	20	
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	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

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								
Cadmium	mg/L	ND	0.1	0.1	0.097	0.10	97	104	75-125	7	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.11	101	108	75-125	7	20		
Cobalt	mg/L	ND	0.1	0.1	0.098	0.10	98	101	75-125	4	20		
Lead	mg/L	ND	0.1	0.1	0.097	0.10	97	101	75-125	4	20		
Lithium	mg/L	0.0032J	0.1	0.1	0.095	0.099	92	96	75-125	4	20		
Molybdenum	mg/L	0.014	0.1	0.1	0.12	0.12	105	109	75-125	4	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.10	97	103	75-125	7	20		
Thallium	mg/L	ND	0.1	0.1	0.094	0.099	94	99	75-125	5	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

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: 92495900019, 92495900020, 92495900021

METHOD BLANK: 3017842 Matrix: Water
Associated Lab Samples: 92495900019, 92495900020, 92495900021

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	
Molybdenum	mg/L	ND	0.010	0.00069	09/30/20 17:26	
Selenium	mg/L	ND	0.010	0.0016	09/30/20 17:26	
Thallium	mg/L	ND	0.0010	0.00014	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	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.093	93	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017844 3017845

Parameter	Units	3017844		3017845		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic	mg/L	0.39	0.1	0.48	0.48	88	90	75-125	1	20	
Barium	mg/L	0.052	0.1	0.15	0.15	98	101	75-125	2	20	
Beryllium	mg/L	0.00011J	0.1	0.087	0.090	87	90	75-125	4	20	
Boron	mg/L	1.6	1	2.4	2.5	79	89	75-125	4	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameter	Units	3017844		3017845		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92495894020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
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		
Molybdenum	mg/L	0.032	0.1	0.1	0.13	0.13	95	99	75-125	3	20		
Selenium	mg/L	0.0016J	0.1	0.1	0.094	0.10	92	98	75-125	6	20		
Thallium	mg/L	0.00036J	0.1	0.1	0.095	0.096	94	95	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 570000 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495900022, 92495900023, 92495900024, 92495900025

METHOD BLANK: 3019421 Matrix: Water
Associated Lab Samples: 92495900022, 92495900023, 92495900024, 92495900025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00078	10/01/20 14:21	
Barium	mg/L	ND	0.010	0.00071	10/01/20 14:21	
Beryllium	mg/L	ND	0.0030	0.000046	10/01/20 14:21	
Boron	mg/L	ND	0.10	0.0052	10/01/20 14:21	
Cadmium	mg/L	ND	0.0025	0.00012	10/01/20 14:21	
Chromium	mg/L	ND	0.010	0.00055	10/01/20 14:21	
Cobalt	mg/L	ND	0.0050	0.00038	10/01/20 14:21	
Lead	mg/L	ND	0.0050	0.000036	10/01/20 14:21	
Lithium	mg/L	ND	0.030	0.00081	10/01/20 14:21	
Molybdenum	mg/L	ND	0.010	0.00069	10/01/20 14:21	
Selenium	mg/L	ND	0.010	0.0016	10/01/20 14:21	
Thallium	mg/L	ND	0.0010	0.00014	10/01/20 14:21	

LABORATORY CONTROL SAMPLE: 3019422

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
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	0.098	98	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	0.10	102	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019423 3019424

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92496941015 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	ND	0.1	0.1	0.098	0.10	98	99	75-125	1	20	
Barium	mg/L	0.043	0.1	0.1	0.15	0.15	102	102	75-125	0	20	
Beryllium	mg/L	0.000058J	0.1	0.1	0.098	0.099	98	99	75-125	1	20	
Boron	mg/L	1.6	1	1	2.6	2.7	98	111	75-125	5	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Parameter	Units	3019423		3019424		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92496941015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Cadmium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	1	20	
Cobalt	mg/L	0.0018J	0.1	0.1	0.10	0.10	99	101	75-125	2	20	
Lead	mg/L	0.000082J	0.1	0.1	0.097	0.10	97	100	75-125	3	20	
Lithium	mg/L	0.0060J	0.1	0.1	0.11	0.11	101	101	75-125	1	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	0.096	0.098	96	98	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-2 SEMIANNUAL

Pace Project No.: 92495900

QC Batch:	572608	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92495900009, 92495900010, 92495900015, 92495900016

METHOD BLANK: 3032633 Matrix: Water
Associated Lab Samples: 92495900009, 92495900010, 92495900015, 92495900016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	10/13/20 12:38	

LABORATORY CONTROL SAMPLE: 3032634

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: 3032635 3032636

Parameter	Units	3032635		3032636		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0026	97	102	75-125	5	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

QC Batch: 567147

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: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007

METHOD BLANK: 3005362

Matrix: Water

Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/17/20 15:18	

LABORATORY CONTROL SAMPLE: 3005363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	384	96	84-108	

SAMPLE DUPLICATE: 3005364

Parameter	Units	92495870005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 3005365

Parameter	Units	92495900007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1890	1860	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

QC Batch:	567372	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: 92495900008, 92495900009, 92495900010

METHOD BLANK: 3006601 Matrix: Water

Associated Lab Samples: 92495900008, 92495900009, 92495900010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/18/20 09:58	

LABORATORY CONTROL SAMPLE: 3006602

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	387	97	84-108	

SAMPLE DUPLICATE: 3006603

Parameter	Units	92495653011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	622	654	5	10	

SAMPLE DUPLICATE: 3006604

Parameter	Units	92495900008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1220	1250	3	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

QC Batch: 568080

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: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

METHOD BLANK: 3010068

Matrix: Water

Associated Lab Samples: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/22/20 14:20	

LABORATORY CONTROL SAMPLE: 3010069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	384	96	84-108	

SAMPLE DUPLICATE: 3010070

Parameter	Units	92495870014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	111	110	1	10	

SAMPLE DUPLICATE: 3010071

Parameter	Units	92495900015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	188	187	1	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

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: 92495900018

METHOD BLANK: 3011476 Matrix: Water

Associated Lab Samples: 92495900018

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-2 SEMIANNUAL
Pace Project No.: 92495900

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: 92495900019, 92495900020, 92495900021

METHOD BLANK: 3012738 Matrix: Water
Associated Lab Samples: 92495900019, 92495900020, 92495900021

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-2 SEMIANNUAL

Pace Project No.: 92495900

QC Batch: 569350 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: 92495900022, 92495900023, 92495900024, 92495900025

METHOD BLANK: 3016719 Matrix: Water
 Associated Lab Samples: 92495900022, 92495900023, 92495900024, 92495900025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/28/20 11:53	

LABORATORY CONTROL SAMPLE: 3016720

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	427	107	84-108	

SAMPLE DUPLICATE: 3016721

Parameter	Units	92496925001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	215	218	1	10	

SAMPLE DUPLICATE: 3016722

Parameter	Units	92495900024 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	894	864	3	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

QC Batch: 568673

Analysis Method: SM 2320B-2011

QC Batch Method: SM 2320B-2011

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007, 92495900008, 92495900009

METHOD BLANK: 3012830

Matrix: Water

Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007, 92495900008, 92495900009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	09/24/20 13:03	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	09/24/20 13:03	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	09/24/20 13:03	

LABORATORY CONTROL SAMPLE: 3012831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	51.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012832 3012833

Parameter	Units	3012832		3012833		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Alkalinity, Total as CaCO ₃	mg/L	307	50	358	50	102	104	80-120	0	25			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012834 3012835

Parameter	Units	3012834		3012835		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Alkalinity, Total as CaCO ₃	mg/L	ND	50	42.7	50	85	84	80-120	1	25			

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568674 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495900010, 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

METHOD BLANK: 3012844 Matrix: Water
Associated Lab Samples: 92495900010, 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	09/24/20 15:38	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	09/24/20 15:38	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	09/24/20 15:38	

LABORATORY CONTROL SAMPLE: 3012845

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	50.2	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012846 3012847

Parameter	Units	3012846		3012847		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Alkalinity, Total as CaCO3	mg/L	294	50	329	50	69	57	80-120	2	25	M1		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012848 3012849

Parameter	Units	3012848		3012849		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Alkalinity, Total as CaCO3	mg/L	15.8	50	68.4	50	105	106	80-120	1	25			

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

QC Batch: 568970	Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92495900018

METHOD BLANK: 3014490 Matrix: Water

Associated Lab Samples: 92495900018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	09/30/20 11:38	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	09/30/20 11:38	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	09/30/20 11:38	

LABORATORY CONTROL SAMPLE: 3014491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	52.5	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3014492 3014493

Parameter	Units	92495894013		3014493		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	231	50	50	274	281	86	100	80-120	3	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3014494 3014495

Parameter	Units	92495894018		3014495		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	288	50	50	343	338	111	100	80-120	2	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 569912 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495900019, 92495900020, 92495900021

METHOD BLANK: 3018962 Matrix: Water
Associated Lab Samples: 92495900019, 92495900020, 92495900021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	09/30/20 15:43	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	09/30/20 15:43	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	09/30/20 15:43	

LABORATORY CONTROL SAMPLE: 3018963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	50.4	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018964 3018965

Parameter	Units	92497388001		3018965		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	2670	50	50	2540	2630	-256	-85	80-120	3	25 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018966 3018967

Parameter	Units	92496574002		3018967		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	66.3	50	50	117	119	101	105	80-120	2	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 570520 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495900022, 92495900023, 92495900024, 92495900025

METHOD BLANK: 3022216 Matrix: Water
Associated Lab Samples: 92495900022, 92495900023, 92495900024, 92495900025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	10/02/20 16:32	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	10/02/20 16:32	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	10/02/20 16:32	

LABORATORY CONTROL SAMPLE: 3022217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	50.9	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3022218 3022219

Parameter	Units	92497530009		3022219		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	22.8	50	50	72.9	73.8	100	102	80-120	1	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3022220 3022221

Parameter	Units	92497916010		3022221		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	15.2	50	50	69.2	69.6	108	109	80-120	1	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568020 Analysis Method: SM 4500-S2D-2011
QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007, 92495900008, 92495900009, 92495900010

METHOD BLANK: 3009676 Matrix: Water
Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007, 92495900008, 92495900009, 92495900010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	09/22/20 14:09	

LABORATORY CONTROL SAMPLE: 3009677

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.52	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009678 3009679

Parameter	Units	92495900001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.52	0.52	98	98	80-120	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009680 3009681

Parameter	Units	92495900002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.39	0.39	77	77	80-120	0	10 M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568021 Analysis Method: SM 4500-S2D-2011
QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

METHOD BLANK: 3009682 Matrix: Water
Associated Lab Samples: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	09/22/20 14:24	

LABORATORY CONTROL SAMPLE: 3009683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.54	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009684 3009685

Parameter	Units	92496157004		3009685		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Sulfide	mg/L	ND	0.5	0.5	0.46	0.47	90	91	80-120	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009686 3009687

Parameter	Units	92496157005		3009687		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Sulfide	mg/L	ND	0.5	0.5	0.38	0.38	72	72	80-120	0	10 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568022 Analysis Method: SM 4500-S2D-2011
QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495900018

METHOD BLANK: 3009689 Matrix: Water
Associated Lab Samples: 92495900018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	09/22/20 14:40	

LABORATORY CONTROL SAMPLE: 3009690

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.53	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009691 3009692

Parameter	Units	92495894013		3009692		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.50	0.50	94	94	80-120	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009693 3009694

Parameter	Units	92495894014		3009694		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.51	0.51	98	98	80-120	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568633 Analysis Method: SM 4500-S2D-2011
QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495900019, 92495900020, 92495900021

METHOD BLANK: 3012716 Matrix: Water
Associated Lab Samples: 92495900019, 92495900020, 92495900021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	09/24/20 11:36	

LABORATORY CONTROL SAMPLE: 3012717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.51	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012718 3012719

Parameter	Units	92496675001		3012719		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.						
Sulfide	mg/L	ND	0.5	0.49	0.49	96	96	80-120	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012720 3012721

Parameter	Units	92496675002		3012721		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.						
Sulfide	mg/L	ND	0.5	0.45	0.45	83	83	80-120	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 569576 Analysis Method: SM 4500-S2D-2011
QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495900022, 92495900023, 92495900024, 92495900025

METHOD BLANK: 3017560 Matrix: Water
Associated Lab Samples: 92495900022, 92495900023, 92495900024, 92495900025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	09/29/20 13:11	

LABORATORY CONTROL SAMPLE: 3017561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.51	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017562 3017563

Parameter	Units	92497358001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Sulfide	mg/L	ND	0.5	0.5	0.53	0.53	104	104	80-120	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017564 3017565

Parameter	Units	92497241004 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Sulfide	mg/L	ND	0.5	0.5	0.37	0.37	74	75	80-120	0	10 M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 567529	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: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007

METHOD BLANK: 3007534 Matrix: Water
Associated Lab Samples: 92495900001, 92495900002, 92495900003, 92495900004, 92495900005, 92495900006, 92495900007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/18/20 16:46	
Fluoride	mg/L	ND	0.10	0.050	09/18/20 16:46	
Sulfate	mg/L	ND	1.0	0.50	09/18/20 16:46	

LABORATORY CONTROL SAMPLE: 3007535

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	2.7	106	90-110	
Sulfate	mg/L	50	52.4	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007536 3007537

Parameter	Units	92496029001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	13.6	50	50	68.1	69.2	109	111	90-110	2	10	M1
Fluoride	mg/L	0.10	2.5	2.5	2.8	2.9	109	112	90-110	3	10	M1
Sulfate	mg/L	7.4	50	50	62.2	63.3	110	112	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007538 3007539

Parameter	Units	92495653005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.5	50	50	58.5	62.8	106	115	90-110	7	10	M1
Fluoride	mg/L	0.057J	2.5	2.5	2.8	3.0	108	116	90-110	7	10	M1
Sulfate	mg/L	241	50	50	287	291	91	100	90-110	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 567607 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: 92495900008, 92495900009, 92495900010

METHOD BLANK: 3008004 Matrix: Water
Associated Lab Samples: 92495900008, 92495900009, 92495900010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/19/20 15:23	
Fluoride	mg/L	ND	0.10	0.050	09/19/20 15:23	
Sulfate	mg/L	ND	1.0	0.50	09/19/20 15:23	

LABORATORY CONTROL SAMPLE: 3008005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.3	105	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	50	52.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3008008 3008009

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495964005	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	7.9	50	50	61.3	62.0	107	108	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	107	108	90-110	1	10		
Sulfate	mg/L	256	50	50	298	299	85	87	90-110	0	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3008006 3008007

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495653007	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	4.4	50	50	57.4	58.2	106	108	90-110	1	10		
Fluoride	mg/L	0.13	2.5	2.5	2.8	2.8	107	109	90-110	1	10		
Sulfate	mg/L	334	50	50	389	385	111	103	90-110	1	10	M6	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 567943	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: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

METHOD BLANK: 3009484 Matrix: Water
Associated Lab Samples: 92495900011, 92495900012, 92495900013, 92495900014, 92495900015, 92495900016, 92495900017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/22/20 07:03	
Fluoride	mg/L	ND	0.10	0.050	09/22/20 07:03	
Sulfate	mg/L	ND	1.0	0.50	09/22/20 07:03	

LABORATORY CONTROL SAMPLE: 3009485

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	110	90-110	
Sulfate	mg/L	50	54.9	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009486 3009487

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495894011 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	105	50	50	152	155	94	101	90-110	2	10		
Fluoride	mg/L	0.10	2.5	2.5	2.7	2.7	103	104	90-110	1	10		
Sulfate	mg/L	209	50	50	255	261	92	103	90-110	2	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009488 3009489

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495900016 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	ND	50	50	52.8	52.5	106	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	52.6	52.2	105	104	90-110	1	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

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: 92495900018

METHOD BLANK: 3011350 Matrix: Water
Associated Lab Samples: 92495900018

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
		92495656005	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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 568379 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: 92495900019, 92495900020, 92495900021

METHOD BLANK: 3011360 Matrix: Water
Associated Lab Samples: 92495900019, 92495900020, 92495900021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/24/20 14:11	
Fluoride	mg/L	ND	0.10	0.050	09/24/20 14:11	
Sulfate	mg/L	ND	1.0	0.50	09/24/20 14:11	

LABORATORY CONTROL SAMPLE: 3011361

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	2.7	109	90-110	
Sulfate	mg/L	50	50.7	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011362 3011363

Parameter	Units	92495870024		3011362		3011363		% 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	0.64J	50	50	54.6	55.2	108	109	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.8	2.8	110	110	90-110	0	10		
Sulfate	mg/L	0.90J	50	50	53.7	54.3	106	107	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011364 3011365

Parameter	Units	92495900019		3011364		3011365		% 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	236	50	50	284	284	96	95	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.5	96	100	90-110	4	10		
Sulfate	mg/L	1010	50	50	1040	1040	78	68	90-110	1	10 M6		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 569514 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495900022, 92495900023, 92495900024

METHOD BLANK: 3017398 Matrix: Water
Associated Lab Samples: 92495900022, 92495900023, 92495900024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/29/20 11:26	
Fluoride	mg/L	ND	0.10	0.050	09/29/20 11:26	
Sulfate	mg/L	ND	1.0	0.50	09/29/20 11:26	

LABORATORY CONTROL SAMPLE: 3017399

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.9	108	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	52.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017400 3017401

Parameter	Units	92496941018		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result						
Chloride	mg/L	ND	50	50	52.4	51.8	105	104	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.3	2.4	93	94	90-110	0	10		
Sulfate	mg/L	ND	50	50	51.0	50.1	101	100	90-110	2	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017402 3017403

Parameter	Units	92496941019		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result						
Chloride	mg/L	ND	50	50	51.7	51.7	103	103	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.3	2.4	91	95	90-110	5	10		
Sulfate	mg/L	ND	50	50	50.0	49.9	100	100	90-110	0	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

QC Batch: 569515 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: 92495900025

METHOD BLANK: 3017404 Matrix: Water
Associated Lab Samples: 92495900025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/29/20 01:40	
Fluoride	mg/L	ND	0.10	0.050	09/29/20 01:40	
Sulfate	mg/L	ND	1.0	0.50	09/29/20 01:40	

LABORATORY CONTROL SAMPLE: 3017405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	54.1	108	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	54.2	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017406 3017407

Parameter	Units	92496914009		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	ND	50	50	52.3	52.6	105	105	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	104	106	90-110	1	10		
Sulfate	mg/L	ND	50	50	51.9	52.3	104	105	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017408 3017409

Parameter	Units	92496914010		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	ND	50	50	51.9	52.4	104	105	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	104	105	90-110	1	10		
Sulfate	mg/L	ND	50	50	51.6	52.0	103	104	90-110	1	10		

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QUALIFIERS

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

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.

MW Due to matrix interference, achieving a constant weight is not possible.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495900001	HGWA-1				
92495900002	HGWA-2				
92495900003	HGWA-3				
92495900004	HGWA-4				
92495900005	HGWA-5				
92495900006	HGWA-6				
92495900007	HGWC-18				
92495900008	HGWC-17				
92495900009	HGWA-43D				
92495900010	HGWA-44D				
92495900011	HGWC-15				
92495900012	HGWC-16				
92495900013	MW-22				
92495900014	MW-23D				
92495900015	HGWA-42D				
92495900018	HGWC-14				
92495900019	MW-21D				
92495900020	MW-33				
92495900021	MW-35				
92495900022	MW-34D				
92495900023	MW-36D				
92495900024	MW-37D				
92495900025	MW-34D FILTERED				
92495900001	HGWA-1	EPA 3010A	568201	EPA 6010D	568230
92495900002	HGWA-2	EPA 3010A	568201	EPA 6010D	568230
92495900003	HGWA-3	EPA 3010A	568201	EPA 6010D	568230
92495900004	HGWA-4	EPA 3010A	568201	EPA 6010D	568230
92495900005	HGWA-5	EPA 3010A	568201	EPA 6010D	568230
92495900006	HGWA-6	EPA 3010A	568201	EPA 6010D	568230
92495900007	HGWC-18	EPA 3010A	568201	EPA 6010D	568230
92495900008	HGWC-17	EPA 3010A	568201	EPA 6010D	568230
92495900009	HGWA-43D	EPA 3010A	568201	EPA 6010D	568230
92495900010	HGWA-44D	EPA 3010A	568201	EPA 6010D	568230
92495900011	HGWC-15	EPA 3010A	568747	EPA 6010D	568813
92495900012	HGWC-16	EPA 3010A	568747	EPA 6010D	568813
92495900013	MW-22	EPA 3010A	568747	EPA 6010D	568813
92495900014	MW-23D	EPA 3010A	568747	EPA 6010D	568813
92495900015	HGWA-42D	EPA 3010A	568747	EPA 6010D	568813
92495900016	FB-02	EPA 3010A	568747	EPA 6010D	568813
92495900017	FD-02	EPA 3010A	568747	EPA 6010D	568813
92495900018	HGWC-14	EPA 3010A	568747	EPA 6010D	568813
92495900019	MW-21D	EPA 3010A	568748	EPA 6010D	568812
92495900020	MW-33	EPA 3010A	568748	EPA 6010D	568812
92495900021	MW-35	EPA 3010A	568748	EPA 6010D	568812
92495900022	MW-34D	EPA 3010A	569461	EPA 6010D	569503
92495900023	MW-36D	EPA 3010A	569461	EPA 6010D	569503
92495900024	MW-37D	EPA 3010A	569461	EPA 6010D	569503

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495900025	MW-34D FILTERED	EPA 3010A	569461	EPA 6010D	569503
92495900001	HGWA-1	EPA 3005A	568198	EPA 6020B	568229
92495900002	HGWA-2	EPA 3005A	568198	EPA 6020B	568229
92495900003	HGWA-3	EPA 3005A	568198	EPA 6020B	568229
92495900004	HGWA-4	EPA 3005A	568198	EPA 6020B	568229
92495900005	HGWA-5	EPA 3005A	568198	EPA 6020B	568229
92495900006	HGWA-6	EPA 3005A	568198	EPA 6020B	568229
92495900007	HGWC-18	EPA 3005A	568198	EPA 6020B	568229
92495900008	HGWC-17	EPA 3005A	568198	EPA 6020B	568229
92495900009	HGWA-43D	EPA 3005A	568198	EPA 6020B	568229
92495900010	HGWA-44D	EPA 3005A	568198	EPA 6020B	568229
92495900011	HGWC-15	EPA 3005A	568430	EPA 6020B	568663
92495900012	HGWC-16	EPA 3005A	568430	EPA 6020B	568663
92495900013	MW-22	EPA 3005A	568430	EPA 6020B	568663
92495900014	MW-23D	EPA 3005A	568430	EPA 6020B	568663
92495900015	HGWA-42D	EPA 3005A	568430	EPA 6020B	568663
92495900016	FB-02	EPA 3005A	568430	EPA 6020B	568663
92495900017	FD-02	EPA 3005A	568430	EPA 6020B	568663
92495900018	HGWC-14	EPA 3005A	568749	EPA 6020B	568811
92495900019	MW-21D	EPA 3005A	569670	EPA 6020B	569718
92495900020	MW-33	EPA 3005A	569670	EPA 6020B	569718
92495900021	MW-35	EPA 3005A	569670	EPA 6020B	569718
92495900022	MW-34D	EPA 3005A	570000	EPA 6020B	570049
92495900023	MW-36D	EPA 3005A	570000	EPA 6020B	570049
92495900024	MW-37D	EPA 3005A	570000	EPA 6020B	570049
92495900025	MW-34D FILTERED	EPA 3005A	570000	EPA 6020B	570049
92495900009	HGWA-43D	EPA 7470A	572608	EPA 7470A	572822
92495900010	HGWA-44D	EPA 7470A	572608	EPA 7470A	572822
92495900015	HGWA-42D	EPA 7470A	572608	EPA 7470A	572822
92495900016	FB-02	EPA 7470A	572608	EPA 7470A	572822
92495900001	HGWA-1	SM 2450C-2011	567147		
92495900002	HGWA-2	SM 2450C-2011	567147		
92495900003	HGWA-3	SM 2450C-2011	567147		
92495900004	HGWA-4	SM 2450C-2011	567147		
92495900005	HGWA-5	SM 2450C-2011	567147		
92495900006	HGWA-6	SM 2450C-2011	567147		
92495900007	HGWC-18	SM 2450C-2011	567147		
92495900008	HGWC-17	SM 2450C-2011	567372		
92495900009	HGWA-43D	SM 2450C-2011	567372		
92495900010	HGWA-44D	SM 2450C-2011	567372		
92495900011	HGWC-15	SM 2450C-2011	568080		
92495900012	HGWC-16	SM 2450C-2011	568080		
92495900013	MW-22	SM 2450C-2011	568080		
92495900014	MW-23D	SM 2450C-2011	568080		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 SEMIANNUAL
Pace Project No.: 92495900

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495900015	HGWA-42D	SM 2450C-2011	568080		
92495900016	FB-02	SM 2450C-2011	568080		
92495900017	FD-02	SM 2450C-2011	568080		
92495900018	HGWC-14	SM 2450C-2011	568395		
92495900019	MW-21D	SM 2450C-2011	568648		
92495900020	MW-33	SM 2450C-2011	568648		
92495900021	MW-35	SM 2450C-2011	568648		
92495900022	MW-34D	SM 2450C-2011	569350		
92495900023	MW-36D	SM 2450C-2011	569350		
92495900024	MW-37D	SM 2450C-2011	569350		
92495900025	MW-34D FILTERED	SM 2450C-2011	569350		
92495900001	HGWA-1	SM 2320B-2011	568673		
92495900002	HGWA-2	SM 2320B-2011	568673		
92495900003	HGWA-3	SM 2320B-2011	568673		
92495900004	HGWA-4	SM 2320B-2011	568673		
92495900005	HGWA-5	SM 2320B-2011	568673		
92495900006	HGWA-6	SM 2320B-2011	568673		
92495900007	HGWC-18	SM 2320B-2011	568673		
92495900008	HGWC-17	SM 2320B-2011	568673		
92495900009	HGWA-43D	SM 2320B-2011	568673		
92495900010	HGWA-44D	SM 2320B-2011	568674		
92495900011	HGWC-15	SM 2320B-2011	568674		
92495900012	HGWC-16	SM 2320B-2011	568674		
92495900013	MW-22	SM 2320B-2011	568674		
92495900014	MW-23D	SM 2320B-2011	568674		
92495900015	HGWA-42D	SM 2320B-2011	568674		
92495900016	FB-02	SM 2320B-2011	568674		
92495900017	FD-02	SM 2320B-2011	568674		
92495900018	HGWC-14	SM 2320B-2011	568970		
92495900019	MW-21D	SM 2320B-2011	569912		
92495900020	MW-33	SM 2320B-2011	569912		
92495900021	MW-35	SM 2320B-2011	569912		
92495900022	MW-34D	SM 2320B-2011	570520		
92495900023	MW-36D	SM 2320B-2011	570520		
92495900024	MW-37D	SM 2320B-2011	570520		
92495900025	MW-34D FILTERED	SM 2320B-2011	570520		
92495900001	HGWA-1	SM 4500-S2D-2011	568020		
92495900002	HGWA-2	SM 4500-S2D-2011	568020		
92495900003	HGWA-3	SM 4500-S2D-2011	568020		
92495900004	HGWA-4	SM 4500-S2D-2011	568020		
92495900005	HGWA-5	SM 4500-S2D-2011	568020		
92495900006	HGWA-6	SM 4500-S2D-2011	568020		
92495900007	HGWC-18	SM 4500-S2D-2011	568020		
92495900008	HGWC-17	SM 4500-S2D-2011	568020		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 SEMIANNUAL

Pace Project No.: 92495900

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495900009	HGWA-43D	SM 4500-S2D-2011	568020		
92495900010	HGWA-44D	SM 4500-S2D-2011	568020		
92495900011	HGWC-15	SM 4500-S2D-2011	568021		
92495900012	HGWC-16	SM 4500-S2D-2011	568021		
92495900013	MW-22	SM 4500-S2D-2011	568021		
92495900014	MW-23D	SM 4500-S2D-2011	568021		
92495900015	HGWA-42D	SM 4500-S2D-2011	568021		
92495900016	FB-02	SM 4500-S2D-2011	568021		
92495900017	FD-02	SM 4500-S2D-2011	568021		
92495900018	HGWC-14	SM 4500-S2D-2011	568022		
92495900019	MW-21D	SM 4500-S2D-2011	568633		
92495900020	MW-33	SM 4500-S2D-2011	568633		
92495900021	MW-35	SM 4500-S2D-2011	568633		
92495900022	MW-34D	SM 4500-S2D-2011	569576		
92495900023	MW-36D	SM 4500-S2D-2011	569576		
92495900024	MW-37D	SM 4500-S2D-2011	569576		
92495900025	MW-34D FILTERED	SM 4500-S2D-2011	569576		
92495900001	HGWA-1	EPA 300.0 Rev 2.1 1993	567529		
92495900002	HGWA-2	EPA 300.0 Rev 2.1 1993	567529		
92495900003	HGWA-3	EPA 300.0 Rev 2.1 1993	567529		
92495900004	HGWA-4	EPA 300.0 Rev 2.1 1993	567529		
92495900005	HGWA-5	EPA 300.0 Rev 2.1 1993	567529		
92495900006	HGWA-6	EPA 300.0 Rev 2.1 1993	567529		
92495900007	HGWC-18	EPA 300.0 Rev 2.1 1993	567529		
92495900008	HGWC-17	EPA 300.0 Rev 2.1 1993	567607		
92495900009	HGWA-43D	EPA 300.0 Rev 2.1 1993	567607		
92495900010	HGWA-44D	EPA 300.0 Rev 2.1 1993	567607		
92495900011	HGWC-15	EPA 300.0 Rev 2.1 1993	567943		
92495900012	HGWC-16	EPA 300.0 Rev 2.1 1993	567943		
92495900013	MW-22	EPA 300.0 Rev 2.1 1993	567943		
92495900014	MW-23D	EPA 300.0 Rev 2.1 1993	567943		
92495900015	HGWA-42D	EPA 300.0 Rev 2.1 1993	567943		
92495900016	FB-02	EPA 300.0 Rev 2.1 1993	567943		
92495900017	FD-02	EPA 300.0 Rev 2.1 1993	567943		
92495900018	HGWC-14	EPA 300.0 Rev 2.1 1993	568377		
92495900019	MW-21D	EPA 300.0 Rev 2.1 1993	568379		
92495900020	MW-33	EPA 300.0 Rev 2.1 1993	568379		
92495900021	MW-35	EPA 300.0 Rev 2.1 1993	568379		
92495900022	MW-34D	EPA 300.0 Rev 2.1 1993	569514		
92495900023	MW-36D	EPA 300.0 Rev 2.1 1993	569514		
92495900024	MW-37D	EPA 300.0 Rev 2.1 1993	569514		
92495900025	MW-34D FILTERED	EPA 300.0 Rev 2.1 1993	569515		

REPORT OF LABORATORY ANALYSIS

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

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

WO#: 92495900



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 0.8 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/16/2004

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

Page: 2 of 3

Section A Required Client Information: Company: GA Power Address: Atlanta, GA		Section B Required Project Information: Report for SCS Contacts Copy To: Geosynics Contacts		Section C Invoice Information: Attention: Southern Co. Company Name:	
Email To: SCS Contacts Phone: [] Requested Due Date/TAT: 10 Day		Purchase Order No.: Project Name: Plant Hammond AP-2-Semiannual Project Number: GWS6818		Address: Pace Quote Reference: Pace Project Manager: Kevin Herring Pace Profile #: 10839-3/10839-2	
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: _____			Site Location STATE: <u>GA</u>		

ITEM #	Section D Required Client Information Valid Matrix Codes MATRIX CODE (see valid codes in list) SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)
		DATE	TIME							UNPRESERVED	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₅	Methanol	Other	Chloride, Fluoride, Sulfate	TDS	App. III&IV Metals 6010/6020*	
1	HGMNA-1 WT G	9-15-20	17:05	9-15-20	17:05	17:05	17:05	17:05	3												
2	HGMNA-2 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
3	HGMNA-3 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
4	HGMNA-4 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
5	HGMNA-5 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
6	HGMNA-6 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
7	HGMNA-7 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
8	HGMNA-8 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
9	HGMNA-9 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
10	HGMNA-10 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
11	HGMNA-11 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												
12	HGMNA-12 WT G	9-15-20	18:20	9-15-20	18:20	18:20	18:20	18:20	3												

Section D Additional Comments: *Sample DS MUST BE UNIQUE*

Section E Release Information: *Release to: []*

Section F Additional Comments: *Major ions: AR, Boron, K, Fe, Mg, Mn, Ni, Na, Sulfate*

Section G Additional Comments: *One sample set submitted for HGMNA-1, HGMNA-2, and HGMNA-3 but results will be reported for AP-1/2/3 SDCs*

Section H Additional Comments: *Additional Comments*

Section I Additional Comments: *Additional Comments*

Section J Additional Comments: *Additional Comments*

Section K Additional Comments: *Additional Comments*

Section L Additional Comments: *Additional Comments*

Section M Additional Comments: *Additional Comments*

Section N Additional Comments: *Additional Comments*

Section O Additional Comments: *Additional Comments*

Section P Additional Comments: *Additional Comments*

Section Q Additional Comments: *Additional Comments*

Section R Additional Comments: *Additional Comments*

Section S Additional Comments: *Additional Comments*

Section T Additional Comments: *Additional Comments*

Section U Additional Comments: *Additional Comments*

Section V Additional Comments: *Additional Comments*

Section W Additional Comments: *Additional Comments*

Section X Additional Comments: *Additional Comments*

Section Y Additional Comments: *Additional Comments*

Section Z Additional Comments: *Additional Comments*

*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-02/Rev.07, 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

Section A

Required Client Information: Company: GA Power

Required Project Information: Report To: SCS Contacts

Section C: Trace Information: Attention: Southern Ca.

Address: Atlanta, GA

Copy To: Geosyntec Contacts

Company Name: Southern Ca.

Email To: SCS Contacts

Purchase Order No: Project Name: Plant Hammond AP-2 Semiannual

Address: Site Name: Reference: Price Project: Kevin Heming

Requested Due Date/TAT: 18 Day

Project Number: GW65518

Price Profile #: 10839-3/10839-2

REGULATORY AGENCY

NPDES, GROUND WATER, DRINKING WATER, UST, RCRA, OTHER

Site Location: GA

Requested Analytes Entered (Y/N)

- Chloride, Fluoride, Sulfate, TDS, App. II&IV Metals 6010/6020, RAD 226/228, Major ions

Residual Chlorine (Y/N)

SAMPLE ID (AZ, 08/1) Sample IDs MUST BE UNIQUE

- Valid Matrix Codes: DOMESTIC WATER, WASTE WATER, WASTE WATER PRODUCT, SOIL, WASTE, WASTE OTHER

MATRIX CODE, SAMPLE TYPE (G=GRAB C=COMP)

COLLECTED: DATE, TIME, DATE, TIME, SAMPLE TEMP AT COLLECTION

Table with columns for # OF CONTAINERS, Unpreserved, H2SO4, HNO3, HCl, NaOH, Na2S2O3, Methanol, Other

Table with columns for Analyte Test: Y/N, N, N, N, N, N

Temp in °C

Received on Ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)

Main data table with columns for ITEM #, MATRIX CODE, SAMPLE TYPE, DATE, TIME, DATE, TIME, SAMPLE TEMP AT COLLECTION, # OF CONTAINERS, Unpreserved, H2SO4, HNO3, HCl, NaOH, Na2S2O3, Methanol, Other, Analyte Test, Residual Chlorine (Y/N), and SAMPLE CONDITIONS

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

NEED ACQUIRED BY / AFFILIATION, DATE, TIME, ACCEPTED BY / AFFILIATION, DATE, TIME

SAMPLER NAME AND SIGNATURE, PRINT Name of SAMPLER, SIGNATURE of SAMPLER, DATE Signed (MM/DD/YY)

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

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 203 of 3

Section A Required Client Information: Company: <u>GA Power</u> Address: <u>Atlanta, GA</u> Email To: <u>SCS Contacts</u> Phone: _____ Fax: _____ Requested Due Date/TAT: <u>18 Day</u>		Section B Required Project Information: Report To: <u>SCS Contacts</u> Copy To: <u>Geosynthetic Contacts</u> Project Name: <u>Plant Hammond AP-2 Semianual</u> Project Number: <u>GW68618</u> Purchase Order No.: _____		Section C Invoice Information: Attention: <u>Southern Ca</u> Company Name: _____ Address: _____ City/State: _____ Phone/Fax: <u>10839-3/10839-2</u>		REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/> Site Location: <u>GA</u> STATE: _____	
--	--	--	--	--	--	---	--

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
					DATE	TIME	DATE					TIME	Chloride	Fluoride	Sulfate		
1	HQWA-1	DISTRICT WATER WASTE WATER PRODUCT SOLVENT OIL WASTE AIR OTHER		G													
2	HQWA-2			G													
3	HQWA-3			G													
4	HQWA-4			G	9/15	1435	-	21	7	3	3						PH = 5.75
5	HQWA-5			G	9/15	1054	-	20	7	3	3						PH = 6.33
6	HQWA-6			G	9/15	1240	-	14	7	3	3						PH = 7.37
7	HQWA-14			G													PH =
8	HQWA-15			G													PH =
9	HQWA-16			G													PH =
10	HQWA-17			G													PH =
11	HQWA-18			G	9/15	1617	-	21	7	3	3						PH = 4.47
12	HW-21D			G													PH =

ADDITIONAL COMMENTS
 Please note dry wash, sticks through any wells not sampled, and note when the last sample for the event has been taken.
 Metals-As, Bar, Ba, Bi, Cd, Ca, Cr, Co, Pb, Li, Mn, Se, Ti
 Major ions - Alk, Bicarb, AK, Fe, Mg, Mn, K, Na, Sulfate
 One sample set submitted for HQWA-1, HQWA-2, and HQWA-3 but results will be reported for AP-1/2/3 SOCs

REMOVED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
<u>Wages Jones</u>	<u>9/15</u>	<u>1703</u>	<u>Crash Russell</u>	<u>9/15</u>	<u>1703</u>
<u>Jodie McWhorter</u>	<u>9/15/20</u>	<u>1928</u>	<u>Jodie McWhorter</u>	<u>9/15/20</u>	<u>1910</u>
<u>Tom Willitts</u>	<u>9/16/20</u>	<u>1451</u>	<u>Tom Willitts</u>	<u>9/16/20</u>	<u>1114</u>
<u>Jane Willitts</u>	<u>9/16/20</u>	<u>1451</u>	<u>Paula</u>	<u>9/16/20</u>	<u>1430</u>

SAAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <u>Thomas J Kessler</u> SIGNATURE OF SAMPLER: <u>[Signature]</u>		DATE Signed (MM/DD/YYYY): <u>9/15/20</u>
Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)
		Samples Intact (N/A)

*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. FALL-Q-920rev/07, 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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

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

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

Section C
Invoice Information:
Company Name: Southern Co.
Address: [blank]
City/State: [blank]

Page: 1 of 2

Section D
Requested Client Information:
Matrix: [blank]
Valid Matrix Codes: [blank]

Section E
Requested Project Information:
Project Name: Plant Hammond AP-2 Semiannual
Project Number: GWM581B

Section F
Purchase Order No.: [blank]
Address: [blank]
City/State: [blank]

Section G
Requested Analysis Filtered (Y/N)

Section H
REGULATORY AGENCY:
NPDES: GROUND WATER: DRINKING WATER:
UST: RCRA: OTHER:

Site Location: [blank]
STATE: GA

ITEM #	Section D Requested 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	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH
					DATE	TIME						
1	HGWA-1	DISSOLVED METALS WATER METALS PRODUCT SOLID/LOU OIL WAX AM OTHER TISSUE	WTF-0	G								
2	HGWA-2		WTF-0	G								
3	HGWA-3		WTF-0	G								
4	HGWA-4		WTF-0	G								
5	HGWA-5		WTF-0	G								
6	HGWA-6		WTF-0	G								
7	HGWG-14		WTF-0	G								
8	HGWG-16		WTF-0	G								
9	HGWG-16		WTF-0	G								
10	HGWC-17		WTF-0	G	9-16	1930		7				6.35
11	HGWG-18		WTF-0	G				3				0.5
12	MMW-21D		WTF-0	G				3				

Presses holes dry wells, strike through any wells not sampled, and note when the last strike for the event has been taken.
*Metals-Vs, Ba, Bi, B, Cd, Ca, Cr, Cu, Fe, Li, Mo, Se, Ti

Major Ions: Alk, Bicarb Alk, Fe, Mg, Mn, K, Na, Sulfate

One sample set submitted for HGWA-1, HGWA-2, and HGWA-3 but results will be reported for AP-1/2/3 SOCs

RELINQUISHED BY / AFFILIATION: [Signature]
DATE: 9-16-20
TIME: 18:30

ACCEPTED BY / AFFILIATION: [Signature]
DATE: 9-16-20
TIME: 18:35

DATE SIGNED (MANDATORY): 9-16-20

Temp in °C: [blank]

Received on Ice (Y/N): [blank]

Custody Sealed Cooler (Y/N): [blank]

Samples intact (Y/N): [blank]



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: City/State: Zip Code: Reference: Pace Project Manager Pace Profile: 14939-4/10839-2	
Email To: SCS Contacts Phone: Pace Requested Date Delivered: 10 Day		Purchase Order No.: Project Name: Plant Hammond AP-2-Semiannual Project Number: GW65818		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 Site Location: GA STATE:	

ITEM #	Section D Requested Client Information	Valid Matrix Codes MATRIX CODE DW WT WW WASTE WATER PRODUCT SOLUSOLID CAL. SL. CL. WP WIR. MR. AT TS	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 = 7.52 pH = 7.83	Pace Project No./ Lab ID.
					DATE	TIME	DATE									
1	MW-42B		WT G	G												
2	MW-43D		WT G	G												
3	MW-44D		WT G	G												
4	EG-02		WT G	G												
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=SB, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl Major ions= Al, Ar, Bicarb, Alk, Fe, Mg, Mn, K, Na, Sulfide One sample set submitted for HGWA-1, HGWA-2, HGWA-3, MW-43D, MW-44D but they will be reported for AP-423 SDGS		REQUISITIONED BY/AFFILIATION Chad Russo 9/11/12 1955 Molecular Dynamics Pace 9/17/12 1305		ACCEPTED BY/AFFILIATION Molecular Dynamics E. K. Pace Brandon Hawk 9/17/12 1305		SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Chad Russo SIGNATURE of SAMPLER: <i>Chad Russo</i> DATE Signed (MM/DD/YY): 9/16/12		Temp in °C Received on Ice (Y/N) Custody Sealed Cooler (Y/N) Samples intact (Y/N)	
--	--	--	--	--	--	--	--	--	--

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

F-ALL-Q-020 rev/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 Address: Atlanta, GA		Required Project Information: Report to: SCS Contacts Copy To: Geosynlec Contacts		Invoice Information: Attention: Southern Co. Company Name:	
Purchase Order No.:		Project Name: Plant Hammond AP-2 Semiannuel Project Number: GWS6818		Address: Pass Grade: Reference: Member: Pool Proba #: 10839-3/10839-2	
Requested Due Date/TAT: 10 Day		Fac: []		REGULATORY AGENCY: NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>	
Site Location STATE: GA		Requested Analysis Filtered (Y/N)		Residual Chlorine (Y/N)	

ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9, /) SAMPLE IDS MUST BE UNIQUE	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					Residual Chlorine (Y/N)	PH						
					DATE	TIME	DATE			TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate	TDS	App. H&I&V Metals 6010/6020*			RAD 226/228	Major ions				
																										Y/N	Y/N	Y/N	Y/N
1	HQWA-1	WT G	WT G	G	9-17-14	1425	-	20	7	3	3	3	3	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=6.11
2	HQWA-2	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=
3	HQWA-3	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=
4	HQWA-4	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=
5	HQWA-5	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=
6	HQWA-6	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=
7	HQWA-14	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=
8	HQWA-15	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=6.11
9	HQWA-16	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=
10	HQWA-17	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=
11	HQWA-18	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=
12	NAW-210	WT G	WT G	G					2	2	2	2	2	2	2	1	X	X	X	X	X	X	X	X	X	X	X	N	PH=

ADDITIONAL COMMENTS:

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

Waters: As, Ba, Bi, Ca, Cr, Cu, Fe, Hg, Li, Mn, Ni, Pb, Se, Tl

Major Ions: Alk, Bicarb Alk, Fe, Mg, Mn, K, Na, Sulfate

One sample set submitted for HQWA-1, HQWA-2, and HQWA-3 but results will be reported for AP-1/2/3 SDCs

REMOVED BY / AFFILIATION: Wesley Thomas / BGS/INTEK

DATE: 9-17-14

TIME: 1930

ACCEPTED BY / AFFILIATION: Wesley Thomas

DATE: 9-17-14

TIME: 1930

TEMP IN °C: 5.1

RECEIVED ON ICE (Y/N): Y

CUSTODY SEALED COOLER (Y/N): Y

SAMPLES INTACT (Y/N): Y

PRINT NAME OF SAMPLER: Wesley Thomas

SIGNATURE OF SAMPLER: [Signature]

DATE SIGNED (MM/DD/YYYY): 9-17-2014

Page: 1 of 2

[Signature]

Important Note: By signing this form you are accepting Paces' MCT 30 day payment terms and agreeing to late charges of 1.2% per month (or any amount not paid within 30 days).

F-ALL-Q-021rev.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: Fax
 Requested Due Date/TIME: 10 Day

Section B Required Project Information:
 Report To: SCS Contacts
 Copy To: Geosyntec Contacts
 Purchase Order No.:
 Project Name: Plant Hammond AP-2 Semiannual
 Project Number: GW6581B

Section C Invoicing Information:
 Attention: Southern Co.
 Company Name:
 Address:
 P.O. Box:
 Reference:
 Sales Person:
 Account Manager:
 Phone/Fax: 10839-3/10839-2

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location: STATE: GA

ITEM #	Section D Required Client Information	Matrix Code	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analytes Filtered (Y/N)	Residual Chlorine (Y/N)	pH
				DATE	TIME							
1	HQWV-1	WT	G				1		Chloride, Fluoride, Sulfate TDS App. III/IV Metals 6010/8020 RAD 228/228 Major Ions			
2	HQWA-2	WT	G				1					
3	HQWA-3	WT	G				1					
4	HQWA-4	WT	G				1					
5	HQWA-5	WT	G				1					
6	HQWA-6	WT	G				1					
7	HQWA-4	WT	G				1					
8	HQWA-15	WT	G				1					
9	HQWA-16	WT	G	9-17-10	1152	71	3	3	1			
10	HQWA-47	WT	G				1					
11	HQWA-18	WT	G				1					
12	HQWA-49	WT	G				1					

Section D Values Matrix Codes
 MATRIX CODE: (see vwb codes to left)
 SAMPLE TYPE: (G=GRAB C=COMP)
 COLLECTED: 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 6010/8020, RAD 228/228, Major Ions
 Requested Analytes Filtered (Y/N)
 Residual Chlorine (Y/N)
 pH

RELEASING BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
WHSKIN TRAINOR / GEOSYNTEC	9-17-10	1830	WHSKIN TRAINOR	9-17	1830	
WHSKIN TRAINOR / GEOSYNTEC	9-17-10	2800	WHSKIN TRAINOR	9-17	2800	
Melissa Mendenhall / P&G	9-18-10	1017	Melissa Mendenhall / P&G	9-18-10	1020	
Melissa Mendenhall / P&G	9-18-10	1345	Melissa Mendenhall / P&G	9-18-10	1345	

Additional Comments:
 Please note dry wells, send enough any wells not sampled and note when the last sample for the event has been taken.
 Major Ions: Al, As, Bicarb Alk, Fe, Mg, Mn, K, Na, Sulfate
 One sample set submitted for HQWA-1, HQWA-2, and HQWA-3 but results will be reported for AP-1/2/3 SOCs

PRINT Name of SAMPLER: WHSKIN TRAINOR
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 9-17-10

Temp in °C: 5.1
 Received on Ice (Y/N): Y
 Custody Sealed Cooler (Y/N): Y
 Samples Intact (Y/N): Y

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



CHAIN-OF-CUSTODY / Analytical Request Document

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 Analytical Information: Location: Southern Co. Company Name: Address: Regulatory Agency: NPDES GROUND WATER DRINKING WATER

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER OTHER. Site Location: GA. Requested Date Deferral: 14 Day. Project Name: Plant Hammond AP-2 Semiannual.

Main data table with columns: ITEM #, Valid Matrix Codes, MATRIX CODE, SAMPLE TYPE, DATE, TIME, DATE, TIME, SAMPLE TEMP AT COLLECTION, # OF CONTAINERS, Preservatives, Analysis Test, Residual Chlorine (Y/N), pH.

ADDITIONAL COMMENTS: Spores from dry waste, states through any waste not sampled and... RELINQUISHED BY / AFFILIATION: W. THORNTON

SAMPLER NAME AND SIGNATURE: W. THORNTON. DATE SIGNED: 9-17-20. RECEIVED ON (ice Y/N): Y. CUSTODY SEALED COOLER (Y/N): Y.

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

Page: 3 of 6



CHAIN-OF-CUSTODY / Analytical Request Document

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4 of 6

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:	
Email To: SCS Contacts Fax:		Purchase Order No.:		Address:	
Place:		Project Name: Plant Hammond AP-2-Semiannual		Pace Quote:	
Requested Due Date/TIME: 10 Day		Project Number: GW65818		Regional Manager: Kevin Herring Pace Phone #: 10836-3710836-2	
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 USE:			Site Location: GA STATE:		

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	DATE	TIME	DATE	TIME	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analyte Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab ID.
1	MMW-22	WT G	9/17	1718						2	Unpreserved	Chloride, Fluoride, Sulfate	N	N	
2	MMW-23D	WT G	9/17	1718						3	H ₂ SO ₄	FOS	N	N	
3	MMW-43	WT G								3	HNO ₃	App. IR&IV Metals 6010/6020*	N	N	
4	MMW-34D	WT G								3	HCl	RAD 226/228	N	N	
5	MMW-35	WT G								3	NaOH	Major Ions	N	N	
6	MMW-38D	WT G								3	Na ₂ S ₂ O ₃		N	N	
7	MMW-32D	WT G								3	Methanol		N	N	
8	FD-02	WT G								3	Other		N	N	
9		WT G								3			N	N	
10		WT G								3			N	N	
11		WT G								3			N	N	
12		WT G								3			N	N	

Additional Comments: Please note dry weeks - entire through any weeks not sampled, and note when the last sample for the event has been taken.

Major ions: Alk, Barium, Alk, Fe, Mg, Mn, K, Na, Sulfate

One sample set submitted for HGWA-1, HGVA-2, and HGVA-3. All results will be provided for AP-1/2/3 SDGs.

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Paula Murphy / Pace	9/17/00	10:17	Kevin Herring / Pace	9/17/00	16:38
Paula Murphy / Pace	9/18/00	13:45	Kevin Herring / Pace	9/18/00	16:38

Temp in °C: 57.7

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): Y

Samples Intact (Y/N): Y

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

F-ALL-Q-020REV.07, 16-F-80-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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

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

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

Section C Project Information: Attention: Southern Co. Company Name: Address: Project Order No.: Purchase Order No.: Project Name: Plant Hammond AP 2 Sarlilnmaul Project Number: GW6581B

Section D Sample Information: Matrix Code: 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 60106020* RAD 226/228 Major Ions** Requested Analytes Filtered (Y/N)

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER UST RCRA OTHER 09H-- Site Location: GA STATE: REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER UST RCRA OTHER 09H-- Site Location: GA STATE:

Page: 5 of 6

ITEM #	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	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Analysis Test	Chloride, Fluoride, Sulfate	TDS	Full App. III&IV Metals 60106020*	RAD 226/228	Major Ions**	Requested Analytes Filtered (Y/N)	Residual Chlorine (Y/N)	Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
1	MM-42D	DRINKING WATER WATER WASTE WATER PRODUCT ACQUAQUAD OIL WIPE AIR OTHER TISSUE	WT G	G	9/17	1345	-	-	21	7	3	3	3	3	3	3	3	3	3	X	X	X	X	X	X						
2	MM-43D		WT G	G						7	3	3	3	3	3	3	3	3	3	X	X	X	X	X	X						
3	MM-44D		WT G	G						7	3	3	3	3	3	3	3	3	3	X	X	X	X	X	X						
4	FB-02		WT G	G	9/17	1846				7	3	3	3	3	3	3	3	3	3	X	X	X	X	X	X						

Section D Additional Comments	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Chad E. Ross	9/17	2000	Mobility/10/12/2000	9/17	2000	
	Mobility/10/12/2000	9/18/20	1017	Kevin Herring	9/18/20	1038	
	Kevin Herring	9/18/20	1346	Plant - Plant	9/18/20	1345	

One sample set submitted for HGM/4-1, HGMVA-2, HGMVA-3, MM-43D, MM-44D but they will be reported for AS-1/2/3 SCS

Sampler Name and Signature: PRINT Name of SAMPLER: Chad E. Ross SIGNATURE of SAMPLER: [Signature] DATE Signed (MM/DD/YY): 9/17/2020

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

CHAIN-OF-CUSTODY / Analytical Request Document

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

6 of 6

Page: 2 of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GA Power	Report To:	SCS Contacts	Attention:	Southern Co.
Address:	Atlanta, GA	Copy To:	Geosyntec Contacts	Company Name:	
Address:	Atlanta, GA	Purchase Order No.:		Address:	
Email To:	SCS Contacts	Project Name:	Plant Hammond AP-2 Semiannual	Project Manager:	Kevin Heering
Phone:		Requested Due Date/TAT:	10 Day	Project Number:	GW65818
Requested Due Date/TAT:	10 Day	Requested Analysis Filtered (Y/N)		Requested Analysis Filtered (Y/N)	

ITEM #	Valid Matrix Codes MATERIAL DRINKING WATER WASTE WATER WASTEWATER INDUSTRIAL WASTE WASTE WATER AIR OTHER TISSUE	SCS 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 =
					DATE	TIME	DATE							
1	MMW-22		WT-G	G				3						
2	MMW-28B		WT-G	G				3						
3	MMW-33		WT-G	G				3						
4	MMW-24B		WT-G	G				3						
5	MMW-35		WT-G	G				3						
6	MMW-36D		WT-G	G				3						
7	MMW-37D		WT-G	G				3						
8	FD-02		WT-G	G	9-17-20			7						
9														
10														
11														
12														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry weight - stirrer through any acids not sampled, and note when the last sample for the event has been taken. HHS/SCS, Box, B, CA, CA, CA, CO, CO, PO, LI, MO, SA, TI Major ions = Alk, Bismut, Ank, Fe, Mg, Mn, K, Na, Sulfate	KEVIN HEERING / GEOSYNTEC	9-17-20	1835	KEVIN HEERING / GEOSYNTEC	9-17	1835	Temp in °C Received on Ice (Y/N) Custody Sealed Cooler (Y/N) Samples Intact (Y/N)
	KEVIN HEERING / GEOSYNTEC	9/17	2000	KEVIN HEERING / GEOSYNTEC	9/17	2000	
	Melissa Mendenhall / Pace	9/18/20	1017	Melissa Mendenhall / Pace	9/18/20	1020	
	Melissa Mendenhall / Pace	9/19/20	1345	Melissa Mendenhall / Pace	9/19/20	1345	

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the changes of 1.25% per month for any invoices not paid within 30 days.

F-ALL-Q-02-DREV-07 15-F-96-2007



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: _____ Fax: _____ Requested Due Date/TAT: 10 Day		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosynlec Contacts Purchase Order No.: _____ Project Name: Plant Hammond AP-2 Semiannual Project Number: GWS6818		Section C Invoice Information: Attention: Southern Co. Company Name: _____ Address: _____ POC Name: _____ POC Title: _____ POC Phone #: 10839-3/10839-2	
REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>			Site Location: _____ STATE: GA		

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	SCOPE	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
						DATE	TIME	DATE					DATE	DATE	DATE	DATE		
1	HQMA-1	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved	Chloride, Fluoride, Sulfate	N	N	N	N	N	N
2	HQMA-2	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved	TDS	N	N	N	N	N	N
3	HQMA-3	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved	App. III&IV Metals 6010/6020	N	N	N	N	N	N
4	HQMA-4	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved	RAD 228/228	N	N	N	N	N	N
5	HQMA-5	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved	Major ions	N	N	N	N	N	N
6	HQMA-6	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved		N	N	N	N	N	N
7	HQMA-7	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved		N	N	N	N	N	N
8	HQMA-8	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved		N	N	N	N	N	N
9	HQMA-9	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved		N	N	N	N	N	N
10	HQMA-10	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved		N	N	N	N	N	N
11	HQMA-11	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved		N	N	N	N	N	N
12	HQMA-12	WT-G	WT-G	WT-G	G	9/18	20	9	20	2	Unpreserved		N	N	N	N	N	N

ADDITIONAL COMMENTS:

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

Major ions: Al, Bar, B, Ca, Cd, Cr, Cu, Fe, Li, Mg, Mn, Ni, Pb, Se, Si, Zn

One sample set submitted for HQMA-1, HQMA-2, and HQMA-3 but results will be reported for AP-1/2/3 SCS

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Walter J. Throckmold / Southern Co.	9/18	1645	Walter J. Throckmold / Southern Co.	9/18	1645
Walter J. Throckmold / Southern Co.	9/18	1645	Walter J. Throckmold / Southern Co.	9/18	1645
Walter J. Throckmold / Southern Co.	9/18	1645	Walter J. Throckmold / Southern Co.	9/18	1645

SAMPLER NAME AND SIGNATURE: _____

PRINT Name of SAMPLER: _____

SIGNATURE of SAMPLER: _____

DATE Signed (MM/DD/YYYY): 9-18-20

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-0200rev 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: <u>GA Power</u> Address: <u>Atlanta, GA</u>		Section B Required Project Information Report to: <u>SCS Contacts</u> Copy to: <u>Geospatial Contacts</u>		Section C Invoice Information Address: <u>Southern Co.</u> Company Name:	
Requested Client Information Project Name: <u>Plant Hammond AP-2 Semiannual</u> Requested Due Date/TIME: <u>10 day</u> Project Number: <u>GW65918</u>		Purchase Order No.: Project Name:		Address: Fee Quote: Release: Fee Project Manager: Fee Profile #: <u>10839-3/10839-2</u>	
REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>		Site Location STATE: <u>GA</u>		Page: <u>2</u> of <u>3</u>	

ITEM #	Valid Matrix Codes MATRIX: DOMESTIC WATER, WASTE WATER, WASTE WATER, SPILLAGE, OIL, ASPHALT, ASPHALT, ASPHALT, ASPHALT, ASPHALT	SCALE GV, WT, MW, ML, TL, MW, ML, TL, MW, ML, TL	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			SAMPLE TEMP AT COLLECTION	PRESERVATIVES							Requested Analysis: Filtered (Y/N)				Residual Chlorine (Y/N)	SAMPLER NAME AND SIGNATURE															
					DATE	TIME	DATE		TIME	UNPRESERVED	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Chloride, Fluoride, Sulfate	TDS			App. IR&V Metals 6010/6020	RAD 228/226	Major Ions												
					DATE	TIME	DATE		TIME	# OF CONTAINERS																										
1	HQWA-1	WT	G	WT G																																

ADDITIONAL COMMENTS: Please note dry wells, sealed through any wells not sampled, and note when the last sample for the event has been taken. (Metals: As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, U, Mn, Se, Ti)

Major ions: Al, Ag, Bi, Br, Br, Fe, Mg, Mn, K, Na, Sulfide

One sample set submitted for: HQWA-1, HQWA-2, and HQWA-3. All results will be reported for AP-1/2/3 SDCs.

REQUISITIONED BY / AFFILIATION: URS | THAYKOR | REGULATORY **DATE:** 09-21-20

ACCEPTED BY / AFFILIATION: URS | RUGGERO | GSO **DATE:** 09/21/20

DATE SIGNED (MM/DD/YY): 0-2-20

Temp in °C: _____ Received on ice (Y/N): _____ Custody Sealed Cooler (Y/N): _____ Samples In tact (Y/N): _____

Residual Chlorine (Y/N)
Pace Project No./ Lab ID.
PH = 6.92
URS

PH = 6.92
URS

FALL-0-020REV.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

Section B
 Required Project Information

Section C
 Invoice Information

Company: GA Power			Report To: SCS Contacts			Company Name: Southern Co.		
Address: Atlanta, GA			Copy To: Geosyntec Contacts			Address:		
Email To: SCS Contacts			Purchase Order No.:			REGULATORY AGENCY		
Phone:			Project Name: Plant Hammond AP-2 Semiannual			<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER		
Requested Due Date/TIME: 10 Day			Project Number: GVG6581B			<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER (ent)		
Fax:			Site Location:			STATE: GA		
Requested Due Date/TIME: 10 Day			Requested Analysis Filtered (Y/N)			Residual Chlorine (Y/N)		
Site Location:			Analysis Test			Temp In °C		
State: GA			Chloride, Fluoride, Sulfate			Received on Ice (Y/N)		
Project Name: Plant Hammond AP-2 Semiannual			TDS			Custody Sealed Cooler (Y/N)		
Project Number: GVG6581B			App. III&IV Metals 6010/6020*			Sample Intact (Y/N)		
Company Name: Southern Co.			RAD 228/228					
Address:			Major Ions					
Invoice Number: 10038-3/10838-2								

Page: 3 of 3

ITEM #	Section D Required Client Information VALID MATRIX CODES Required Matrix Code MATRIX CODE Sample IDs MUST BE UNIQUE	Section B Required Project Information Matrix Code (see valid codes to left)	Section C Required Analysis Filtered (Y/N)	COLLECTED		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives	Analysis Test	Residual Chlorine (Y/N)	
				DATE	TIME	DATE						TIME
						DATE	TIME					
1	MW-22	WT G	Unpreserved	9/21	12:00	2000	3		X			
2	MW-23D	WT G	H ₂ SO ₄	9/21	21:00	2000	3		X			
3	MW-33	WT G	HNO ₃	9/21	21:00	2000	3		X			
4	MW-34D	WT G	HCl	9/21	21:00	2000	3		X			
5	MW-35	WT G	NaOH	9/21	21:00	2000	3		X			
6	MW-36D	WT G	Na ₂ S ₂ O ₅	9/21	21:00	2000	3		X			
7	MW-37B	WT G	Methanol	9/21	21:00	2000	3		X			
8	FD-02	WT G	Other	9/21	21:00	2000	3		X			

RELEASING BY / AFFILIATION		ACCEPTED BY / AFFILIATION		SAMPLER NAME AND SIGNATURE		SAMPLER NAME AND SIGNATURE		SAMPLER NAME AND SIGNATURE	
DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME
9/21	2000	9/21	2000	9/21	2000	9/21	2000	9/21	2000
9/21	21:00	9/21	21:00	9/21	21:00	9/21	21:00	9/21	21:00
9/21	09:15	9/21	09:15	9/21	09:15	9/21	09:15	9/21	09:15

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

Materials: As, Ba, Bi, Br, Cd, Ca, Cr, Cu, Pb, Li, Ni, Se, Ti

Major ions: Ag, Bismuth, Ar, Fe, Mg, Mn, K, Na, Sulfide

One sample set submitted for HGVA-1, HGVA-2, and HGVA-3 but results will be reported for AP-1/2/3 SDGs

Regulatory Agency: NPDES, GROUND WATER, DRINKING WATER, UST, RCRA, OTHER (ent)

Site Location: GA

Temp In °C: 4.1

Received on Ice (Y/N): X

Custody Sealed Cooler (Y/N): NX

Sample Intact (Y/N): NX

Signature: Thomas J. Messer

Date Signed: 09/21/00



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

Section A: Requested Client Information: Company: GA Power Address: Atlanta, GA	Section B: Requested Project Information: Report To: SCS Contacts Copy To: Geosyntec Contacts	Section C: Inchase Information: Advertiser: Southern Co. Company Name: Address: Phone: Fax: Project Name: Plant Hammond AP-2 Semimannual Project Number: GW65818	Section D: Purchase Order No.: Address: Price Quote Reference: Karlin Harding Price Project Manager: Price Point # 10839-3/10839-2	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 USE: Site Location: GA STATE:
---	---	---	---	--

ITEM #	Section D Requested Client Information SAMPLE ID (A-Z, 0-9, /) Sample IDs MUST BE UNIQUE	Matrix WATER WASTE WATER PRECIPITATE SOLID DUST AIR OTHER TERRIL	Code DW WW VW SL DI WP AM OT TS	Matrix Code (see valid codes to left)	SAMPLE TYPE (GeGRAB Co-COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives						Analysis Test	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH		
													H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol						Other	Chloride, Fluoride, Sulfate
1	MM-22			WT G																					
2	MM-23B			WT G																					
3	MM-23			WT G																					
4	MM-34D			WT G	P-25-20	16:30																			
5	MM-26			WT G																					
6	MM-36D			WT G	P-25-20	11:15																			
7	MM-37D			WT G	P-28-20	08:50																			
8	SD-02			WT G																					
9	MM-24B FILLER			WT G	P-25-20	17:40																			
10																									
11																									
12																									

ADDITIONAL COMMENTS:
 Please note dry wells, settle through any wells not sampled, and note when the last sample for the event has been taken.
 *Codes - A, Ba, Bb, Bc, C, Ca, Cc, Cg, Cn, Cx, Cw, D, Da, Db, Dc, Dn, Ds, E, Ea, Eb, Ec, Ed, Ee, F, Fa, Fb, Fc, Fd, Fe, G, Ga, Gb, Gc, Gd, Ge, H, Ha, Hb, Hc, Hd, He, I, Ia, Ib, Ic, Id, Ie, J, Ja, Jb, Jc, Jd, Je, K, Ka, Kb, Kc, Kd, Ke, L, La, Lb, Lc, Ld, Le, M, Ma, Mb, Mc, Md, Me, N, Na, Nb, Nc, Nd, Ne, O, Oa, Ob, Oc, Od, Oe, P, Pa, Pb, Pc, Pd, Pe, Q, Qa, Qb, Qc, Qd, Qe, R, Ra, Rb, Rc, Rd, Re, S, Sa, Sb, Sc, Sd, Se, T, Ta, Tb, Tc, Td, Te, U, Ua, Ub, Uc, Ud, Ue, V, Va, Vb, Vc, Vd, Ve, W, Wa, Wb, Wc, Wd, We, X, Xa, Xb, Xc, Xd, Xe, Y, Ya, Yb, Yc, Yd, Ye, Z, Za, Zb, Zc, Zd, Ze.

RELINQUISHED BY / AFFILIATION: W. K. THORNTON / GEOSYNTEC
DATE: 9-23-20
TIME: 18:10

ACCEPTED BY / AFFILIATION: [Signature] / GEOSYNTEC
DATE: 9-23-20
TIME: 18:10

MAJOR IONS: Alk, Bicarb Alk, Fe, Mg, Mn, K, Na, Sulfate
 One sample set submitted for HGMVA-1, HGMVA-2, and HGMVA-3
 All results will be reported for AP-1223 SDG.

SAMPLER NAME AND SIGNATURE: W. K. THORNTON
DATE SIGNED: 9-23-20

PRINT NAME OF SAMPLER: W. K. THORNTON
SIGNATURE OF SAMPLER: [Signature]

DATE SIGNED (SAMPLED BY): 9-23-20

TEMPERATURE: _____ °C
RECEIVED ON ICE (Y/N): _____
CUSTOMER SEALED COOLER (Y/N): _____
SAMPLES INTACT (Y/N): _____

Page: 1 of 1

October 19, 2020

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

RE: Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 16, 2020 and September 24, 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-2 SEMIANNUAL RADS

Pace Project No.: 92495890

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-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92495890001	HGWA-1	Water	09/15/20 14:01	09/16/20 11:14
92495890002	HGWA-2	Water	09/15/20 10:58	09/16/20 11:14
92495890003	HGWA-3	Water	09/15/20 11:45	09/16/20 11:14
92495890004	HGWA-4	Water	09/15/20 14:35	09/16/20 11:14
92495890005	HGWA-5	Water	09/15/20 10:54	09/16/20 11:14
92495890006	HGWA-6	Water	09/15/20 12:40	09/16/20 11:14
92495890007	HGWC-18	Water	09/15/20 16:17	09/16/20 11:14
92495890008	HGWC-17	Water	09/16/20 17:30	09/17/20 09:45
92495890009	HGWA-43D	Water	09/16/20 11:58	09/17/20 09:45
92495890010	HGWA-44D	Water	09/16/20 15:18	09/17/20 09:45
92495890011	HGWC-15	Water	09/17/20 14:25	09/18/20 10:20
92495890012	HGWC-16	Water	09/17/20 11:52	09/18/20 10:20
92495890013	MW-22	Water	09/17/20 17:00	09/18/20 10:20
92495890014	MW-23D	Water	09/17/20 17:18	09/18/20 10:20
92495890015	HGWA-42D	Water	09/17/20 13:45	09/18/20 10:20
92495890016	FB-02	Water	09/17/20 18:46	09/18/20 10:20
92495890017	FD-02	Water	09/17/20 00:00	09/18/20 10:20
92495890018	HGWC-14	Water	09/18/20 09:20	09/21/20 09:25
92495890019	MW-21D	Water	09/21/20 10:30	09/22/20 09:25
92495890020	MW-33	Water	09/21/20 13:00	09/22/20 09:25
92495890021	MW-35	Water	09/21/20 12:55	09/22/20 09:25
92495890022	MW-34D	Water	09/23/20 16:30	09/24/20 10:25
92495890023	MW-36D	Water	09/23/20 11:15	09/24/20 10:25
92495890024	MW-37D	Water	09/23/20 08:50	09/24/20 10:25
92495890025	MW-34D FILTERED	Water	09/23/20 17:00	09/24/20 10:25

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92495890001	HGWA-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
92495890002	HGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
92495890003	HGWA-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
92495890004	HGWA-4	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92495890005	HGWA-5	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92495890006	HGWA-6	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92495890007	HGWC-18	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
92495890008	HGWC-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495890009	HGWA-43D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495890010	HGWA-44D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495890011	HGWC-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495890012	HGWC-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495890013	MW-22	EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92495890014	MW-23D	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890015	HGWA-42D	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890016	FB-02	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890017	FD-02	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890018	HGWC-14	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890019	MW-21D	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890020	MW-33	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890021	MW-35	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890022	MW-34D	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890023	MW-36D	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890024	MW-37D	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92495890025	MW-34D FILTERED	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		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-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495890001	HGWA-1					
EPA 9315	Radium-226	0.0193 ± 0.226 (0.595) C:83% T:NA	pCi/L		10/07/20 07:29	
EPA 9320	Radium-228	0.729 ± 0.435 (0.807) C:71% T:83%	pCi/L		10/07/20 14:00	
Total Radium Calculation	Total Radium	0.748 ± 0.661 (1.40)	pCi/L		10/09/20 14:09	
92495890002	HGWA-2					
EPA 9315	Radium-226	0.124 ± 0.339 (0.807) C:87% T:NA	pCi/L		10/07/20 07:30	
EPA 9320	Radium-228	-0.233 ± 0.417 (1.01) C:66% T:81%	pCi/L		10/07/20 14:00	
Total Radium Calculation	Total Radium	0.124 ± 0.756 (1.82)	pCi/L		10/09/20 14:09	
92495890003	HGWA-3					
EPA 9315	Radium-226	0.161 ± 0.215 (0.449) C:89% T:NA	pCi/L		10/07/20 07:30	
EPA 9320	Radium-228	-0.305 ± 0.343 (0.865) C:74% T:83%	pCi/L		10/07/20 14:00	
Total Radium Calculation	Total Radium	0.161 ± 0.558 (1.31)	pCi/L		10/09/20 14:09	
92495890004	HGWA-4					
EPA 9315	Radium-226	0.0964 ± 0.162 (0.356) C:89% T:NA	pCi/L		10/15/20 06:57	
EPA 9320	Radium-228	0.0826 ± 0.394 (0.897) C:70% T:87%	pCi/L		10/16/20 14:41	
Total Radium Calculation	Total Radium	0.179 ± 0.556 (1.25)	pCi/L		10/19/20 09:49	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495890005	HGWA-5					
EPA 9315	Radium-226	0.280 ± 0.345 (0.677) C:87% T:NA	pCi/L		10/15/20 06:57	
EPA 9320	Radium-228	0.321 ± 0.518 (1.12) C:73% T:88%	pCi/L		10/16/20 14:41	
Total Radium Calculation	Total Radium	0.601 ± 0.863 (1.80)	pCi/L		10/19/20 09:49	
92495890006	HGWA-6					
EPA 9315	Radium-226	0.425 ± 0.378 (0.653) C:89% T:NA	pCi/L		10/15/20 06:56	
EPA 9320	Radium-228	0.937 ± 0.754 (1.52) C:68% T:79%	pCi/L		10/16/20 14:41	
Total Radium Calculation	Total Radium	1.36 ± 1.13 (2.17)	pCi/L		10/19/20 09:49	
92495890007	HGWC-18					
EPA 9315	Radium-226	0.470 ± 0.326 (0.579) C:98% T:NA	pCi/L		10/07/20 07:37	
EPA 9320	Radium-228	1.18 ± 0.568 (0.967) C:67% T:76%	pCi/L		10/07/20 14:01	
Total Radium Calculation	Total Radium	1.65 ± 0.894 (1.55)	pCi/L		10/09/20 14:09	
92495890008	HGWC-17					
EPA 9315	Radium-226	0.0642 ± 0.168 (0.409) C:92% T:NA	pCi/L		10/07/20 07:38	
EPA 9320	Radium-228	0.231 ± 0.404 (0.883) C:79% T:80%	pCi/L		10/08/20 11:52	
Total Radium Calculation	Total Radium	0.295 ± 0.572 (1.29)	pCi/L		10/12/20 13:50	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495890009	HGWA-43D					
EPA 9315	Radium-226	0.531 ± 0.341 (0.558)	pCi/L		10/07/20 07:38	
EPA 9320	Radium-228	C:83% T:NA -0.0158 ± 0.401 (0.931)	pCi/L		10/08/20 11:52	
Total Radium Calculation	Total Radium	C:73% T:74% 0.531 ± 0.742 (1.49)	pCi/L		10/12/20 13:50	
92495890010	HGWA-44D					
EPA 9315	Radium-226	0.129 ± 0.179 (0.380)	pCi/L		10/07/20 07:38	
EPA 9320	Radium-228	C:100% T:NA 0.293 ± 0.412 (0.887)	pCi/L		10/08/20 11:52	
Total Radium Calculation	Total Radium	C:76% T:83% 0.422 ± 0.591 (1.27)	pCi/L		10/12/20 13:50	
92495890011	HGWC-15					
EPA 9315	Radium-226	0.395 ± 0.270 (0.392)	pCi/L		10/07/20 07:12	
EPA 9320	Radium-228	C:85% T:NA -0.0424 ± 0.710 (1.64)	pCi/L		10/08/20 14:59	
Total Radium Calculation	Total Radium	C:71% T:54% 0.395 ± 0.980 (2.03)	pCi/L		10/12/20 13:50	
92495890012	HGWC-16					
EPA 9315	Radium-226	0.166 ± 0.199 (0.387)	pCi/L		10/07/20 07:12	
EPA 9320	Radium-228	C:83% T:NA 0.938 ± 0.633 (1.22)	pCi/L		10/08/20 14:59	
Total Radium Calculation	Total Radium	C:73% T:61% 1.10 ± 0.832 (1.61)	pCi/L		10/12/20 13:50	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495890013	MW-22					
EPA 9315	Radium-226	-0.127 ± 0.148 (0.567)	pCi/L		10/07/20 07:12	
EPA 9320	Radium-228	C:68% T:NA 0.0879 ± 0.461 (1.04)	pCi/L		10/08/20 14:59	
Total Radium Calculation	Total Radium	C:75% T:80% 0.0879 ± 0.609 (1.61)	pCi/L		10/12/20 13:50	
92495890014	MW-23D					
EPA 9315	Radium-226	0.0723 ± 0.161 (0.383)	pCi/L		10/07/20 07:12	
EPA 9320	Radium-228	C:93% T:NA 0.248 ± 0.503 (1.11)	pCi/L		10/08/20 14:59	
Total Radium Calculation	Total Radium	C:76% T:74% 0.320 ± 0.664 (1.49)	pCi/L		10/12/20 13:50	
92495890015	HGWA-42D					
EPA 9315	Radium-226	0.0264 ± 0.298 (0.748)	pCi/L		10/08/20 06:52	
EPA 9320	Radium-228	C:93% T:NA 0.639 ± 0.484 (0.959)	pCi/L		10/08/20 12:27	
Total Radium Calculation	Total Radium	C:61% T:90% 0.665 ± 0.782 (1.71)	pCi/L		10/12/20 13:50	
92495890016	FB-02					
EPA 9315	Radium-226	-0.0630 ± 0.142 (0.476)	pCi/L		10/08/20 06:52	
EPA 9320	Radium-228	C:86% T:NA 0.250 ± 0.457 (1.00)	pCi/L		10/08/20 12:27	
Total Radium Calculation	Total Radium	C:65% T:80% 0.250 ± 0.599 (1.48)	pCi/L		10/12/20 13:50	

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495890017	FD-02					
EPA 9315	Radium-226	-0.0628 ± 0.180 (0.546) C:87% T:NA	pCi/L		10/08/20 06:52	
EPA 9320	Radium-228	0.491 ± 0.524 (1.09) C:65% T:69%	pCi/L		10/08/20 12:27	
Total Radium Calculation	Total Radium	0.491 ± 0.704 (1.64)	pCi/L		10/12/20 13:50	
92495890018	HGWC-14					
EPA 9315	Radium-226	0.749 ± 0.391 (0.605) C:95% T:NA	pCi/L		10/07/20 07:38	
EPA 9320	Radium-228	1.05 ± 0.676 (1.30) C:72% T:64%	pCi/L		10/08/20 14:58	
Total Radium Calculation	Total Radium	1.80 ± 1.07 (1.91)	pCi/L		10/12/20 13:50	
92495890019	MW-21D					
EPA 9315	Radium-226	0.149 ± 0.263 (0.598) C:91% T:NA	pCi/L		10/08/20 06:53	
EPA 9320	Radium-228	0.287 ± 0.460 (0.997) C:61% T:79%	pCi/L		10/09/20 12:28	
Total Radium Calculation	Total Radium	0.436 ± 0.723 (1.60)	pCi/L		10/12/20 13:50	
92495890020	MW-33					
EPA 9315	Radium-226	0.916 ± 0.387 (0.448) C:90% T:NA	pCi/L		10/08/20 06:53	
EPA 9320	Radium-228	1.61 ± 0.599 (0.891) C:69% T:78%	pCi/L		10/09/20 12:28	
Total Radium Calculation	Total Radium	2.53 ± 0.986 (1.34)	pCi/L		10/12/20 13:50	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495890021	MW-35					
EPA 9315	Radium-226	0.563 ± 0.312 (0.443)	pCi/L		10/08/20 06:53	
EPA 9320	Radium-228	C:91% T:NA 3.29 ± 0.959 (1.09)	pCi/L		10/09/20 15:42	
Total Radium Calculation	Total Radium	C:56% T:71% 3.85 ± 1.27 (1.53)	pCi/L		10/12/20 13:50	
92495890022	MW-34D					
EPA 9315	Radium-226	0.217 ± 0.361 (0.814)	pCi/L		10/14/20 06:24	
EPA 9320	Radium-228	C:80% T:NA 0.346 ± 0.369 (0.771)	pCi/L		10/15/20 14:29	
Total Radium Calculation	Total Radium	C:77% T:84% 0.563 ± 0.730 (1.59)	pCi/L		10/19/20 09:49	
92495890023	MW-36D					
EPA 9315	Radium-226	-0.0688 ± 0.201 (0.618)	pCi/L		10/14/20 08:18	
EPA 9320	Radium-228	C:80% T:NA 0.410 ± 0.372 (0.759)	pCi/L		10/15/20 14:29	
Total Radium Calculation	Total Radium	C:75% T:86% 0.410 ± 0.573 (1.38)	pCi/L		10/19/20 09:49	
92495890024	MW-37D					
EPA 9315	Radium-226	0.386 ± 0.298 (0.514)	pCi/L		10/14/20 06:24	
EPA 9320	Radium-228	C:83% T:NA 0.594 ± 0.423 (0.823)	pCi/L		10/15/20 14:29	
Total Radium Calculation	Total Radium	C:75% T:75% 0.980 ± 0.721 (1.34)	pCi/L		10/19/20 09:49	

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495890025	MW-34D FILTERED					
EPA 9315	Radium-226	0.546 ± 0.327 (0.515)	pCi/L		10/14/20 07:28	
EPA 9320	Radium-228	C:92% T:NA -0.00899 ± 0.391 (0.906)	pCi/L		10/15/20 14:29	
Total Radium Calculation	Total Radium	C:68% T:83% 0.546 ± 0.718 (1.42)	pCi/L		10/19/20 09:49	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-1 Lab ID: 92495890001 Collected: 09/15/20 14:01 Received: 09/16/20 11:14 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0193 ± 0.226 (0.595) C:83% T:NA	pCi/L	10/07/20 07:29	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.729 ± 0.435 (0.807) C:71% T:83%	pCi/L	10/07/20 14:00	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.748 ± 0.661 (1.40)	pCi/L	10/09/20 14:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-2 Lab ID: 92495890002 Collected: 09/15/20 10:58 Received: 09/16/20 11:14 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.124 ± 0.339 (0.807) C:87% T:NA	pCi/L	10/07/20 07:30	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.233 ± 0.417 (1.01) C:66% T:81%	pCi/L	10/07/20 14:00	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.124 ± 0.756 (1.82)	pCi/L	10/09/20 14:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-3 Lab ID: 92495890003 Collected: 09/15/20 11:45 Received: 09/16/20 11:14 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.161 ± 0.215 (0.449) C:89% T:NA	pCi/L	10/07/20 07:30	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.305 ± 0.343 (0.865) C:74% T:83%	pCi/L	10/07/20 14:00	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.161 ± 0.558 (1.31)	pCi/L	10/09/20 14:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-4 Lab ID: 92495890004 Collected: 09/15/20 14:35 Received: 09/16/20 11:14 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0964 ± 0.162 (0.356) C:89% T:NA	pCi/L	10/15/20 06:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.0826 ± 0.394 (0.897) C:70% T:87%	pCi/L	10/16/20 14:41	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.179 ± 0.556 (1.25)	pCi/L	10/19/20 09:49	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-5 Lab ID: 92495890005 Collected: 09/15/20 10:54 Received: 09/16/20 11:14 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.280 ± 0.345 (0.677) C:87% T:NA	pCi/L	10/15/20 06:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.321 ± 0.518 (1.12) C:73% T:88%	pCi/L	10/16/20 14:41	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.601 ± 0.863 (1.80)	pCi/L	10/19/20 09:49	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-6 Lab ID: 92495890006 Collected: 09/15/20 12:40 Received: 09/16/20 11:14 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.425 ± 0.378 (0.653) C:89% T:NA	pCi/L	10/15/20 06:56	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.937 ± 0.754 (1.52) C:68% T:79%	pCi/L	10/16/20 14:41	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.36 ± 1.13 (2.17)	pCi/L	10/19/20 09:49	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-18 Lab ID: 92495890007 Collected: 09/15/20 16:17 Received: 09/16/20 11:14 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.470 ± 0.326 (0.579) C:98% T:NA	pCi/L	10/07/20 07:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.18 ± 0.568 (0.967) C:67% T:76%	pCi/L	10/07/20 14:01	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.65 ± 0.894 (1.55)	pCi/L	10/09/20 14:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-17 Lab ID: 92495890008 Collected: 09/16/20 17:30 Received: 09/17/20 09:45 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0642 ± 0.168 (0.409) C:92% T:NA	pCi/L	10/07/20 07:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.231 ± 0.404 (0.883) C:79% T:80%	pCi/L	10/08/20 11:52	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.295 ± 0.572 (1.29)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-43D Lab ID: 92495890009 Collected: 09/16/20 11:58 Received: 09/17/20 09:45 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.531 ± 0.341 (0.558) C:83% T:NA	pCi/L	10/07/20 07:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.0158 ± 0.401 (0.931) C:73% T:74%	pCi/L	10/08/20 11:52	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.531 ± 0.742 (1.49)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-44D Lab ID: 92495890010 Collected: 09/16/20 15:18 Received: 09/17/20 09:45 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.129 ± 0.179 (0.380) C:100% T:NA	pCi/L	10/07/20 07:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.293 ± 0.412 (0.887) C:76% T:83%	pCi/L	10/08/20 11:52	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.422 ± 0.591 (1.27)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-15 Lab ID: 92495890011 Collected: 09/17/20 14:25 Received: 09/18/20 10:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.395 ± 0.270 (0.392) C:85% T:NA	pCi/L	10/07/20 07:12	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.0424 ± 0.710 (1.64) C:71% T:54%	pCi/L	10/08/20 14:59	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.395 ± 0.980 (2.03)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-16 Lab ID: 92495890012 Collected: 09/17/20 11:52 Received: 09/18/20 10:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.166 ± 0.199 (0.387) C:83% T:NA	pCi/L	10/07/20 07:12	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.938 ± 0.633 (1.22) C:73% T:61%	pCi/L	10/08/20 14:59	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.10 ± 0.832 (1.61)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Sample: MW-22 **Lab ID: 92495890013** Collected: 09/17/20 17:00 Received: 09/18/20 10:20 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	-0.127 ± 0.148 (0.567) C:68% T:NA	pCi/L	10/07/20 07:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.0879 ± 0.461 (1.04) C:75% T:80%	pCi/L	10/08/20 14:59	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.0879 ± 0.609 (1.61)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Sample: MW-23D **Lab ID: 92495890014** Collected: 09/17/20 17:18 Received: 09/18/20 10:20 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	0.0723 ± 0.161 (0.383) C:93% T:NA	pCi/L	10/07/20 07:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.248 ± 0.503 (1.11) C:76% T:74%	pCi/L	10/08/20 14:59	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.320 ± 0.664 (1.49)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-42D Lab ID: 92495890015 Collected: 09/17/20 13:45 Received: 09/18/20 10:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0264 ± 0.298 (0.748) C:93% T:NA	pCi/L	10/08/20 06:52	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.639 ± 0.484 (0.959) C:61% T:90%	pCi/L	10/08/20 12:27	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.665 ± 0.782 (1.71)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Sample: FB-02 **Lab ID: 92495890016** Collected: 09/17/20 18:46 Received: 09/18/20 10:20 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	-0.0630 ± 0.142 (0.476) C:86% T:NA	pCi/L	10/08/20 06:52	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.250 ± 0.457 (1.00) C:65% T:80%	pCi/L	10/08/20 12:27	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.250 ± 0.599 (1.48)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Sample: FD-02 **Lab ID: 92495890017** Collected: 09/17/20 00:00 Received: 09/18/20 10:20 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	-0.0628 ± 0.180 (0.546) C:87% T:NA	pCi/L	10/08/20 06:52	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.491 ± 0.524 (1.09) C:65% T:69%	pCi/L	10/08/20 12:27	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.491 ± 0.704 (1.64)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-14 Lab ID: 92495890018 Collected: 09/18/20 09:20 Received: 09/21/20 09:25 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.749 ± 0.391 (0.605) C:95% T:NA	pCi/L	10/07/20 07:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.05 ± 0.676 (1.30) C:72% T:64%	pCi/L	10/08/20 14:58	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.80 ± 1.07 (1.91)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.149 ± 0.263 (0.598) C:91% T:NA	pCi/L	10/08/20 06:53	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.287 ± 0.460 (0.997) C:61% T:79%	pCi/L	10/09/20 12:28	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.436 ± 0.723 (1.60)	pCi/L	10/12/20 13:50	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Sample: MW-33 **Lab ID: 92495890020** Collected: 09/21/20 13:00 Received: 09/22/20 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	0.916 ± 0.387 (0.448) C:90% T:NA	pCi/L	10/08/20 06:53	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.61 ± 0.599 (0.891) C:69% T:78%	pCi/L	10/09/20 12:28	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.53 ± 0.986 (1.34)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Sample: MW-35 **Lab ID: 92495890021** Collected: 09/21/20 12:55 Received: 09/22/20 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	0.563 ± 0.312 (0.443) C:91% T:NA	pCi/L	10/08/20 06:53	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	3.29 ± 0.959 (1.09) C:56% T:71%	pCi/L	10/09/20 15:42	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	3.85 ± 1.27 (1.53)	pCi/L	10/12/20 13:50	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Sample: MW-34D **Lab ID: 92495890022** Collected: 09/23/20 16:30 Received: 09/24/20 10:25 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	0.217 ± 0.361 (0.814) C:80% T:NA	pCi/L	10/14/20 06:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.346 ± 0.369 (0.771) C:77% T:84%	pCi/L	10/15/20 14:29	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.563 ± 0.730 (1.59)	pCi/L	10/19/20 09:49	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Sample: MW-36D **Lab ID: 92495890023** Collected: 09/23/20 11:15 Received: 09/24/20 10:25 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • One container received with lid on crooked, spilled in transit.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	-0.0688 ± 0.201 (0.618) C:80% T:NA	pCi/L	10/14/20 08:18	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.410 ± 0.372 (0.759) C:75% T:86%	pCi/L	10/15/20 14:29	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.410 ± 0.573 (1.38)	pCi/L	10/19/20 09:49	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-37D Lab ID: 92495890024 Collected: 09/23/20 08:50 Received: 09/24/20 10:25 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.386 ± 0.298 (0.514) C:83% T:NA	pCi/L	10/14/20 06:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.594 ± 0.423 (0.823) C:75% T:75%	pCi/L	10/15/20 14:29	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.980 ± 0.721 (1.34)	pCi/L	10/19/20 09:49	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

Sample: MW-34D FILTERED **Lab ID: 92495890025** Collected: 09/23/20 17:00 Received: 09/24/20 10:25 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	0.546 ± 0.327 (0.515) C:92% T:NA	pCi/L	10/14/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.00899 ± 0.391 (0.906) C:68% T:83%	pCi/L	10/15/20 14:29	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.546 ± 0.718 (1.42)	pCi/L	10/19/20 09:49	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch:	415616	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg
Associated Lab Samples:	92495890002, 92495890003, 92495890007, 92495890008, 92495890009, 92495890010, 92495890011, 92495890012, 92495890013, 92495890014, 92495890018		

METHOD BLANK:	2009756	Matrix:	Water
Associated Lab Samples:	92495890002, 92495890003, 92495890007, 92495890008, 92495890009, 92495890010, 92495890011, 92495890012, 92495890013, 92495890014, 92495890018		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0920 ± 0.177 (0.408) C:91% T:NA	pCi/L	10/07/20 07:30	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch:	417131	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92495890022, 92495890023, 92495890024, 92495890025

METHOD BLANK: 2016812 Matrix: Water

Associated Lab Samples: 92495890022, 92495890023, 92495890024, 92495890025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.888 ± 0.380 (0.600) C:70% T:99%	pCi/L	10/15/20 11:15	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch:	418032	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92495890004, 92495890005, 92495890006

METHOD BLANK: 2021109 Matrix: Water

Associated Lab Samples: 92495890004, 92495890005, 92495890006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.106 ± 0.162 (0.345) C:92% T:NA	pCi/L	10/15/20 07:21	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch:	415620	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92495890019, 92495890020, 92495890021

METHOD BLANK: 2009760 Matrix: Water

Associated Lab Samples: 92495890019, 92495890020, 92495890021

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.796 ± 0.463 (0.837) C:62% T:83%	pCi/L	10/09/20 12:28	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch:	415615	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92495890001

METHOD BLANK:	2009755	Matrix:	Water
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Associated Lab Samples: 92495890001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.119 ± 0.160 (0.326) C:94% T:NA	pCi/L	10/06/20 17:26	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch: 415617

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92495890015, 92495890016, 92495890017, 92495890019, 92495890020, 92495890021

METHOD BLANK: 2009757

Matrix: Water

Associated Lab Samples: 92495890015, 92495890016, 92495890017, 92495890019, 92495890020, 92495890021

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	1.55 ± 0.513 (0.438) C:92% T:NA	pCi/L	10/08/20 06:52	1g

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch: 415618

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92495890001, 92495890002, 92495890003, 92495890007

METHOD BLANK: 2009758

Matrix: Water

Associated Lab Samples: 92495890001, 92495890002, 92495890003, 92495890007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.318 ± 0.350 (0.730) C:76% T:82%	pCi/L	10/07/20 10:48	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch:	417130	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92495890022, 92495890023, 92495890024, 92495890025

METHOD BLANK: 2016810 Matrix: Water

Associated Lab Samples: 92495890022, 92495890023, 92495890024, 92495890025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.00529 ± 0.135 (0.392) C:94% T:NA	pCi/L	10/14/20 07:09	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch:	418037	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92495890004, 92495890005, 92495890006

METHOD BLANK: 2021120 Matrix: Water

Associated Lab Samples: 92495890004, 92495890005, 92495890006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.335 ± 0.463 (0.993) C:71% T:73%	pCi/L	10/16/20 14:41	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 SEMIANNUAL RADS

Pace Project No.: 92495890

QC Batch:	415619	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg
Associated Lab Samples:	92495890008, 92495890009, 92495890010, 92495890011, 92495890012, 92495890013, 92495890014, 92495890015, 92495890016, 92495890017, 92495890018		

METHOD BLANK:	2009759	Matrix:	Water
Associated Lab Samples:	92495890008, 92495890009, 92495890010, 92495890011, 92495890012, 92495890013, 92495890014, 92495890015, 92495890016, 92495890017, 92495890018		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.390 ± 0.341 (0.687) C:75% T:83%	pCi/L	10/08/20 11:51	

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QUALIFIERS

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.
A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1g Analyte detected in MB at concentration above MDC and RL of 1.0 pCi/L. Samples results are reportable without qualification if they are less than their associated MDC or RL of 1.0 pCi/L.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495890001	HGWA-1	EPA 9315	415615		
92495890002	HGWA-2	EPA 9315	415616		
92495890003	HGWA-3	EPA 9315	415616		
92495890004	HGWA-4	EPA 9315	418032		
92495890005	HGWA-5	EPA 9315	418032		
92495890006	HGWA-6	EPA 9315	418032		
92495890007	HGWC-18	EPA 9315	415616		
92495890008	HGWC-17	EPA 9315	415616		
92495890009	HGWA-43D	EPA 9315	415616		
92495890010	HGWA-44D	EPA 9315	415616		
92495890011	HGWC-15	EPA 9315	415616		
92495890012	HGWC-16	EPA 9315	415616		
92495890013	MW-22	EPA 9315	415616		
92495890014	MW-23D	EPA 9315	415616		
92495890015	HGWA-42D	EPA 9315	415617		
92495890016	FB-02	EPA 9315	415617		
92495890017	FD-02	EPA 9315	415617		
92495890018	HGWC-14	EPA 9315	415616		
92495890019	MW-21D	EPA 9315	415617		
92495890020	MW-33	EPA 9315	415617		
92495890021	MW-35	EPA 9315	415617		
92495890022	MW-34D	EPA 9315	417130		
92495890023	MW-36D	EPA 9315	417130		
92495890024	MW-37D	EPA 9315	417130		
92495890025	MW-34D FILTERED	EPA 9315	417130		
92495890001	HGWA-1	EPA 9320	415618		
92495890002	HGWA-2	EPA 9320	415618		
92495890003	HGWA-3	EPA 9320	415618		
92495890004	HGWA-4	EPA 9320	418037		
92495890005	HGWA-5	EPA 9320	418037		
92495890006	HGWA-6	EPA 9320	418037		
92495890007	HGWC-18	EPA 9320	415618		
92495890008	HGWC-17	EPA 9320	415619		
92495890009	HGWA-43D	EPA 9320	415619		
92495890010	HGWA-44D	EPA 9320	415619		
92495890011	HGWC-15	EPA 9320	415619		
92495890012	HGWC-16	EPA 9320	415619		
92495890013	MW-22	EPA 9320	415619		
92495890014	MW-23D	EPA 9320	415619		
92495890015	HGWA-42D	EPA 9320	415619		
92495890016	FB-02	EPA 9320	415619		
92495890017	FD-02	EPA 9320	415619		
92495890018	HGWC-14	EPA 9320	415619		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 SEMIANNUAL RADS
Pace Project No.: 92495890

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495890019	MW-21D	EPA 9320	415620		
92495890020	MW-33	EPA 9320	415620		
92495890021	MW-35	EPA 9320	415620		
92495890022	MW-34D	EPA 9320	417131		
92495890023	MW-36D	EPA 9320	417131		
92495890024	MW-37D	EPA 9320	417131		
92495890025	MW-34D FILTERED	EPA 9320	417131		
92495890001	HGWA-1	Total Radium Calculation	417873		
92495890002	HGWA-2	Total Radium Calculation	417873		
92495890003	HGWA-3	Total Radium Calculation	417873		
92495890004	HGWA-4	Total Radium Calculation	419126		
92495890005	HGWA-5	Total Radium Calculation	419126		
92495890006	HGWA-6	Total Radium Calculation	419126		
92495890007	HGWC-18	Total Radium Calculation	417873		
92495890008	HGWC-17	Total Radium Calculation	418091		
92495890009	HGWA-43D	Total Radium Calculation	418091		
92495890010	HGWA-44D	Total Radium Calculation	418091		
92495890011	HGWC-15	Total Radium Calculation	418091		
92495890012	HGWC-16	Total Radium Calculation	418091		
92495890013	MW-22	Total Radium Calculation	418091		
92495890014	MW-23D	Total Radium Calculation	418091		
92495890015	HGWA-42D	Total Radium Calculation	418091		
92495890016	FB-02	Total Radium Calculation	418091		
92495890017	FD-02	Total Radium Calculation	418091		
92495890018	HGWC-14	Total Radium Calculation	418091		
92495890019	MW-21D	Total Radium Calculation	418091		
92495890020	MW-33	Total Radium Calculation	418091		
92495890021	MW-35	Total Radium Calculation	418091		
92495890022	MW-34D	Total Radium Calculation	419126		
92495890023	MW-36D	Total Radium Calculation	419126		
92495890024	MW-37D	Total Radium Calculation	419126		
92495890025	MW-34D FILTERED	Total Radium Calculation	419126		

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Sample Condition Upon Receipt



Client Name: GA Power

WO#: **92495890**



Courier: Fed Ex UPS USPS Client Commercial Pace Otr
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 0.4 Biological Tissue is Frozen: Yes No Date and initials of person examining contents: 9/19/2004
Temp should be above freezing to 8°C Comments: _____

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input 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) <u>all</u>	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

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

Project Manager Review: _____ Date: _____

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



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

Document issued: March 14, 2019
Page 1 of 1
Issuing Authority:

Project #

WO# : 92495890

PM: KLH1

Due Date: 10/07/20

CLIENT: GA-GA Power

* Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

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

Matrix	Item #	Item Description	1	2	3	4	5	6	7	8	9	10	11	12
	BP4U-125 mL Plastic Unpreserved (N/A) (C-)			2										
	BP3U-250 mL Plastic Unpreserved (N/A)			2										
	BP2U-500 mL Plastic Unpreserved (N/A)			2										
	BP1U-1 liter Plastic Unpreserved (N/A)			2										
	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)													
	BP2N-250 mL plastic HNO3 (pH < 2)													
	BP4Z-125 mL Plastic 2N Acetic & NaOH (>9)													
	BP4C-125 mL Plastic NaOH (pH > 12) (C-)													
	WGFLU-Wide-mouthed Glass Jar Unpreserved													
	AG1U-1 liter Amber Unpreserved (N/A) (C-)													
	AG1H-1 liter Amber HCl (pH < 2)													
	AG3U-250 mL Amber Unpreserved (N/A) (C-)													
	AG1S-1 liter Amber H2SO4 (pH < 2)													
	AG3S-250 mL Amber H2SO4 (pH < 2)													
	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)													
	DG9H-40 mL VOA HCl (N/A)													
	VG2T-40 mL VOA NH2SO3 (N/A)													
	VG9U-40 mL VOA Unp (N/A)													
	DG9P-40 mL VOA H3PO4 (N/A)													
	VDAK (6 vials per kit)-5035 kit (N/A)													
	V/GK (3 vials per kit)-VPH/Gas kit (N/A)													
	SP2T-125 mL Sterile Plastic (N/A - lab)													
	SP2T-250 mL Sterile Plastic (N/A - lab)													
	BP9A-250 mL Plastic (NH2)2SO4 (9.3-9.7)													
	AG6U-100 mL Amber Unpreserved vials (N/A)													
	VG6U-20 mL Sanitization vials (N/A)													

BPIN

2 x 12 x 5 x 12 x 2

pH Adjustment Log for Preserved Samples

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

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Off
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
 Phone: SCS Contacts
 Requested Date/Deliver: 10 Day

Section B
 Required Project Information:
 Report to: SCS Contacts
 Copy To: Geosyntec Contacts
 Project Name: Plant Hammond AP-2-Semiannual
 Project Number: GW6581B

Section C
 Invoice Information:
 Company Name: Southern Co.
 Address:
 Kevin Hentig
 Kevin Hentig
 10839-3/10839-2

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

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 =
			DATE	TIME									
1	HGWA-1	WT G	9/15/20	1705	72	7	3	3	H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	N N N N N N N	X X X X X X X	7.15	
2	HGWA-2	WT G	9/15/20	1820	70	7	3	3		N N N N N	X X X X X	5.22	
3	HGWA-3	WT G				7	3	3		N N N N N	X X X X X		
4	HGWA-4	WT G				7	3	3		N N N N N	X X X X X		
5	HGWA-5	WT G				7	3	3		N N N N N	X X X X X		
6	HGWA-6	WT G				7	3	3		N N N N N	X X X X X		
7	HGWA-7	WT G				7	3	3		N N N N N	X X X X X		
8	HGWA-8	WT G				7	3	3		N N N N N	X X X X X		
9	HGWA-9	WT G				7	3	3		N N N N N	X X X X X		
10	HGWA-10	WT G				7	3	3		N N N N N	X X X X X		
11	HGWA-11	WT G				7	3	3		N N N N N	X X X X X		
12	HGWA-12	WT G				7	3	3		N N N N N	X X X X X		

Section D
 Required Client Information
 Valid Matrix Codes
 MATRIX CODE
 SAMPLE TYPE (G=GRAB C=COMP)

RELEASING BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (N/A)
W. H. H. / SCS	9/15/20	1705	W. H. H. / SCS	9/15/20	1705				
Noble / MWH	9/16/20	1820	Noble / MWH	9/16/20	1820				
W. H. H. / SCS	9/16/20	1450	W. H. H. / SCS	9/16/20	1450				

Important Note: By signing this form you are accepting Plant'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 Phone: _____ Requested Date Data/FAT: 14 Day		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosynlec Contacts Purchase Order No.: _____ Project Name: Plant Hammond AP-2 Semiannual Project Number: GW65818		Section C Invoice Information: Attention: Southern Co. Company Name: _____ Address: _____ Pace Quote Reference: Kevin Herring Pace Project Manager: Pace Profile #: 10839-3/10839-2	
REGULATORY AGENCY NPDDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> 098-		Site Location: _____ STATE: GA		Requested Analyte Filtered (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						Analyte Test	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.															
		DATE	TIME	DATE			TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH				Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate	TDS	App. II&IV Metals 6010/6020*	RAD 228/228	Major Ions							
1	HQMA-1 WT G	9/15	1145			26	3	3	3	3	3	3	3	3	X	X	X	X	X	X	X	X	X							
2	HQMA-2 WT G														X	X	X	X	X	X	X	X	X							
3	HQMA-3 WT G														X	X	X	X	X	X	X	X	X							
4	HQMA-4 WT G														X	X	X	X	X	X	X	X	X							
5	HQMA-5 WT G														X	X	X	X	X	X	X	X	X							
6	HQMA-6 WT G														X	X	X	X	X	X	X	X	X							
7	HQMA-7 WT G														X	X	X	X	X	X	X	X	X							
8	HQMA-8 WT G														X	X	X	X	X	X	X	X	X							
9	HQMA-9 WT G														X	X	X	X	X	X	X	X	X							
10	HQMA-10 WT G														X	X	X	X	X	X	X	X	X							
11	HQMA-11 WT G														X	X	X	X	X	X	X	X	X							
12	HQMA-12 WT G														X	X	X	X	X	X	X	X	X							

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.

SAMPLER NAME AND SIGNATURE: **Chad Russo**
 PRINT Name of SAMPLER: **Chad Russo**
 SIGNATURE of SAMPLER: *Chad Russo*
 DATE Signed (MM/DD/YYYY): **9/15/2020**
 Temp in °C: _____
 Received on Ice (Y/N): _____
 Custody Sealed Cooler (Y/N): _____
 Samples Intact (Y/N): _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 183 of 3

Section A Required Client Information: Company: GA Power Address: Atlanta, GA		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosynlec Contacts		Section C Invoice Information: Attention: Southern Co. Company Name:		REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input checked="" type="checkbox"/> DRINKING WATER UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER 099- Site Location: GA STATE:	
Email To: SCS Contacts Phone: [] Fax: [] Requested Due Date/TAT: 48 Day		Purchase Order No.: Project Name: Plant Hammond AP-2 Semiannual Project Number: GW58518		Address: P.O. Box: Attention: Kevin Herring P.O. Box #: 10839-3/10839-2		Requested Analysis Filtered (Y/N)	

ITEM #	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	Preservatives						Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	PH
										H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₅	Methanol				
1	HGWA-1 WT G	G						7	3										
2	HGWA-2 WT G	G						7	3										
3	HGWA-3 WT G	G						7	3										
4	HGWA-4 WT G	G	9/15	1435			21	7	3										
5	HGWA-5 WT G	G	9/15	1054			20	7	3										
6	HGWA-6 WT G	G	9/15	1240			14	7	3										
7	HGWG-14 WT G	G						7	3										
8	HGWG-15 WT G	G						7	3										
9	HGWG-16 WT G	G						7	3										
10	HGWG-17 WT G	G						7	3										
11	HGWG-18 WT G	G	9/15	1617			21	7	3										
12	MW-21D WT G	G						7	3										

ADDITIONAL COMMENTS:
Please note dry wells, sticks through any wells not sampled and date when the last sample for the event has been taken.
*Mats-As, Ba, Be, B, Cl, Ca, Cr, Co, Pb, Li, Mn, Se, Ti

REINQUISHED BY / AFFILIATION:
 9/15 1703 *Placensydes*
 9/15/05 1925 *Greg Rucker*
 9/16/20 1113 *Melba Mubumba*
 9/16/20 1451 *Dr. W. Williams*

ACCEPTED BY / AFFILIATION:
 9/15 1705 *Greg Rucker*
 9/16/20 1310 *Melba Mubumba*
 9/16/20 1114 *Dr. W. Williams*
 9/16/20 1450 *Paula Frank*

SAMPLER NAME AND SIGNATURE:
 PRINT Name of SAMPLER: Thomas J. Kessler
 SIGNATURE OF SAMPLER: *[Signature]*

DATE Signed (MM/DD/YYYY): 9/15/20

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 Race's NET 30 day payment terms and agreeing to limit charges of 1.5% per month for any invoice not paid within 30 days.



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 2

Section A Required Client Information: Company: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: Fax Requested Date/Time: 10 Day	Section B Required Project Information: Report To: SCS Contacts Copy To: Geosyntec Contacts Project Name: Pearl Hammond AP-2 Semiannual Project Number: GW6581B	Section C Analytical Information: Atlanta: Southern Co. Company Name: Address: Site Location: GA State: GA NPDES: <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER UST: <input type="checkbox"/> RCRA: <input type="checkbox"/> OTHER: <input type="checkbox"/>
Requested Analysis Filtered (Y/N)		Requested Date/Time: 10 Day

ITEM #	Section D Required Client Information	Section E Valid Matrix Codes	MATRIX CODE (See valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH =
					DATE	TIME	DATE								
1	HGWA-1	CONCENTRATED WASTE WATER PRODUCT SOLVENT OIL WASTE AIR OTHER ISSUE													
2	HGWA-2														
3	HGWA-3														
4	HGWA-4														
5	HGWA-5														
6	HGWA-6														
7	HGWA-7														
8	HGWA-8														
9	HGWA-9														
10	HGWA-10														
11	HGWA-11														
12	HGWA-12														

ADDITIONAL COMMENTS		RELEASED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		SAMPLE CONDITIONS	
PLEASE NOTE ANY WEBS, SITES THROUGH ANY WALLS NOT SAMPLED, AND	DATE	TIME	DATE	TIME	DATE	TIME	PH
Notes when the last samples for the event has been taken.	0-16-20	19:10	0-16-20	18:35	0-16-20	18:35	
Mississippi, Pa. Ba. E. Cal. Ga. Or. Pa. U. Mo. So. Tl	9/17/20	15:05	9/17/20	13:05	9/17/20	13:05	6.35
Major ions: Alk, Bicarb Alk, Fe, Mg, Mn, K, Na, Sulfate	9/17/20	15:05	9/17/20	13:05	9/17/20	13:05	0.08
One sample not submitted for HGWA-1, HGWA-2, and HGWA-3							
but results will be reported for AP-1/2/3 SCS							

SAMPLER NAME AND SIGNATURE		DATE SIGNED (MM/DD/YYYY)	
PRINT NAME OF SAMPLER: <u>W. K. T. Kavan</u>	SIGNATURE OF SAMPLER: <u>[Signature]</u>	DATE SIGNED (MM/DD/YYYY): <u>9-16-2020</u>	

Important Note: By signing this form you are accepting Part 3 NET 30 day payment terms and agreeing to his 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.

Page: **2** of **2**

Section A Requester Chain Information: Company: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: _____ Fax: _____ Requested Due Date/TAT: 10 Day		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosynlec Contacts Purchase Order No.: _____ Project Name: Plant Hammond AP-2-Semiannual Project Number: GW16581B		Section C Service Information: Attention: Southern Co. Company Name: _____ Address: _____ POC Name: _____ Reference: _____ POC Project: Kevin Herring Manager: _____ Phone/Fax: 10839-4/10839-2	
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: _____ Site Location: _____ STATE: GA			Requested Analysis Filtered (Y/N) Chloride, Fluoride, Sulfate: N N N N N TDS: N N N N N Full App. III&IV Metals 6010/6020*: N N N N N RAD 226/228: N N N N N Major ions*: N N N N N		

ITEM #	Section D Required Chain Information	Valid Matrix Codes MATRIX CODE DIVE WT WASTE WATER P PRODUCT S.L. SOIL/SOLID OIL WIFE W/P AIR A/P OTHER A/P TSS TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	PH
					DATE	TIME								
1	MW-42B		WT G	G				7	3		X			
2	MW-43D		WT G	G				7	3		X			
3	MW-44D		WT G	G				7	3		X			
4	EB-02		WT G	G				7	3		X			
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=50 As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mo, Se, Tl Major ions = Al, B, Br, Cl, F, Fe, Mg, Mn, K, Na, Sulfate One sample set submitted for HGWA-1, HGWA-2, HGWA-3, MW-43D, MW-44D but they will be reported for AP-123 SDGS	Chad Russo / Geo	9/16	1955	Johnathan / Geo	9/16	1955	
	Johnathan / Geo	9/17/20	0945	Johnathan / Geo	9/17/20	0945	
	Johnathan / Geo	9/17/20	1305	Johnathan / Geo	9/17/20	1305	

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Chad Russo SIGNATURE of SAMPLER: <i>Chad Russo</i>		DATE Signed (MM/DD/YY): 9/16/2020	Temp in °C: _____ Received on Ice (Y/N): _____ Custody Sealed Cooler (Y/N): _____ Samples Intact (Y/N): _____
---	--	-----------------------------------	--

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 15% per month for any invoice not paid within 30 days.

F-ALL-Q-0-20rev.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.

Page: 1 of 2

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: Southern Co.
Address:

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

Site Location: _____ STATE: GA

Requested Date Delivered: 10 Day

Project Name: Plant Hammond AP-2-Semiannual
Project Number: QW658-18

Company Name: Face Geo
Address: Face Geo
Project Manager: Kevin Henning
Face Project Manager: Kevin Henning
Face Project #: 10838-3/10839-2

ITEM #	Section D Required Client Information	VALID Matrix Codes MATRIX CODE	MATRIX CODE (see table below)	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
					DATE	TIME			DATE	TIME		Y	N		
1	HQWA-1	WATER	WT-G	G	9-12-20	1830	2	Unpreserved	H ₂ SO ₄	Y	N	Chloride, Fluoride, Sulfate	Y	N	
2	HQWA-2	WATER	WT-G	G	9-17-20	1830	2	Unpreserved	HNO ₃	Y	N	TDS	Y	N	
3	HQWA-3	WATER	WT-G	G	9-17-20	2000	2	Unpreserved	HCl	Y	N	App. III&IV Metals 6010/6020*	Y	N	
4	HQWA-4	WATER	WT-G	G	9-17-20	2000	2	Unpreserved	NaOH	Y	N	RAD 226/228	Y	N	
5	HQWA-5	WATER	WT-G	G	9-17-20	1830	2	Unpreserved	Na ₂ S ₂ O ₃	Y	N	Major ions	Y	N	
6	HQWA-6	WATER	WT-G	G	9-17-20	1830	2	Unpreserved	Methanol	Y	N		Y	N	
7	HQWA-7	WATER	WT-G	G	9-17-20	1830	2	Unpreserved	Other	Y	N		Y	N	
8	HQWA-8	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
9	HQWA-9	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
10	HQWA-10	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
11	HQWA-11	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
12	HQWA-12	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
13	HQWA-13	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
14	HQWA-14	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
15	HQWA-15	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
16	HQWA-16	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
17	HQWA-17	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
18	HQWA-18	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
19	HQWA-19	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	
20	HQWA-20	WATER	WT-G	G	9-17-20	1830	2	Unpreserved		Y	N		Y	N	

Section D
Required Client Information

VALID Matrix Codes
MATRIX CODE

Requested Analysis Filtered (Y/N)

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)

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

Section C
Invoice Information:
Attention: Southern Co.
Company Name: Southern Co.
Address:

REGULATORY AGENCY
NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER USE

Site Location: _____ STATE: GA

Requested Date Delivered: 10 Day

Project Name: Plant Hammond AP-2-Semiannual
Project Number: QW658-18

Company Name: Face Geo
Address: Face Geo
Project Manager: Kevin Henning
Face Project Manager: Kevin Henning
Face Project #: 10838-3/10839-2

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

Site Location: _____ STATE: GA

Requested Date Delivered: 10 Day

Project Name: Plant Hammond AP-2-Semiannual
Project Number: QW658-18

Company Name: Face Geo
Address: Face Geo
Project Manager: Kevin Henning
Face Project Manager: Kevin Henning
Face Project #: 10838-3/10839-2

Section D
Required Client Information

VALID Matrix Codes
MATRIX CODE

Requested Analysis Filtered (Y/N)

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)

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

Section C
Invoice Information:
Attention: Southern Co.
Company Name: Southern Co.
Address:

REGULATORY AGENCY
NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER USE

Site Location: _____ STATE: GA

Requested Date Delivered: 10 Day

Project Name: Plant Hammond AP-2-Semiannual
Project Number: QW658-18

Company Name: Face Geo
Address: Face Geo
Project Manager: Kevin Henning
Face Project Manager: Kevin Henning
Face Project #: 10838-3/10839-2

Section D
Required Client Information

VALID Matrix Codes
MATRIX CODE

Requested Analysis Filtered (Y/N)

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)

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

Page: 2 of 6
6/25/07

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: Atlanta, GA
Email To: SCS Contacts
Phone: Fax
Requested Due Date/TAT: 18 Day
Purchase Order No.:
Project Name: Plant Hammond AP-2 Semiannual
Project Number: GW55818
Company Name:
Address:
Project Date:
Reference: Kevin Henning
Plant Project Manager:
Fac Folder #: 10839-3/10839-2
Requested Analytical Filtered (Y/N)
REGULATORY AGENCY
NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER
Site Location: STATE: GA

ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9 / - /) Sample IDs MUST BE UNIQUE	VALID MATRIX CODES MATERIAL CODE DRAINAGE NUMBER WATER WASTE WATER PRODUCT SOIL/SOILS OIL WIRE WIRE OTHER YES/NO	MATRIX CODE (Use valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES	ANALYSIS TEST	Requested Analytical Filtered (Y/N)	Residual Chlorine (Y/N)
					DATE	TIME						
1	HGWVA-1											
2	HGWVA-2											
3	HGWVA-3											
4	HGWVA-4											
5	HGWVA-5											
6	HGWVA-6											
7	HGWVA-14											
8	HGWVA-15											
9	HGWVA-16											
10	HGWVA-17											
11	HGWVA-18											
12	HW-24B											

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		SAMPLE CONDITIONS	
DATE	TIME	DATE	TIME	DATE	TIME	Temp in °C	Received on Ice (Y/N)
9-17-20	1830	9-17-20	1830	9-17-20	1830		
9-18-20	1017	9-18-20	1017	9-18-20	1017		
9-19-20	1345	9-19-20	1345	9-19-20	1345		

SAAMPLER NAME AND SIGNATURE: VIKING TRAWL
FRONT NAME OF SAAMPLER: VIKING TRAWL
SIGNATURE OF SAAMPLER: [Signature]
DATE Signed: 9-17-20
Temp in °C: 5.1
Received on Ice (Y/N): Y
Custody Sealed Cooler (Y/N): Y
Samples Intact (Y/N): Y

Important Note: By signing this form you are accepting Pacelabs' 30 day payment terms and agreeing to fees charges of 1.5% per month for any overdue cost paid within 30 days.
F-ALL-Q-020REV07, 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

3 of 6

Page: 107 of 107

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: Kevin Herring

Requested Due Date/TAT: to day

Requested Analysis Filtered (Y/N)

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER UST RCRA OTHER

Site Location: GA STATE: GA

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	Preservatives						Analysis Test						Residual Chlorine (Y/N)	Temp in °C	Received on (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)											
					DATE	TIME			DATE	TIME	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate	TDS	App. III&IV Metals 601Q6020						RAD 226/228	Major Ions									
1	MMW-22	CONCRETE	G	G	9-17-20	PM 0	21	7	3	3	1	X	X	X	X	X	X	X																		
2	MMW-29B	CONCRETE	G	G								X	X	X	X	X	X	X																		
3	MMW-33	CONCRETE	G	G								X	X	X	X	X	X	X																		
4	MMW-34D	CONCRETE	G	G								X	X	X	X	X	X	X																		
5	MMW-35	CONCRETE	G	G								X	X	X	X	X	X	X																		
6	MMW-36B	CONCRETE	G	G								X	X	X	X	X	X	X																		
7	MMW-37B	CONCRETE	G	G								X	X	X	X	X	X	X																		
8	FB-62	CONCRETE	G	G								X	X	X	X	X	X	X																		
9																																				
10																																				
11																																				
12																																				

ADDITIONAL COMMENTS: Please note dry weights, some through any weights not sampled and code when the last sample for the event has been taken.

RELINQUISHED BY / AFFILIATION: VNS/SCHEITH THORNDIKE DATE: 9-17-20 TIME: 18:30 ACCEPTED BY / AFFILIATION: G. J. BASSER / JACOBI DATE: 9/17 TIME: 2000

DATE Signed (MM/DD/YYYY): 9-17-20

Temp in °C: 51

Received on (Y/N): Y

Custody Sealed Cooler (Y/N): Y

Samples Intact (Y/N): Y

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

FALL-0-20/rev.07. 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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4 of 6

Page: 3030

Section A
 Required Client Information:
 Company: GA Power
 Address: Atlanta GA
 Contact: SCS Contacts
 Email To:
 Phone:
 Requested Date Delivered: 10 Day

Section B
 Required Project Information:
 Report to: SCS Contacts
 Copy To: Geosyntec Contacts
 Project Name: Plant Hammond AP-2-Semiarual
 Project Number: GWR8S1B

Section C
 Invoice Information:
 Attention: Southern Co.
 Company Name:
 Address:
 Fax:
 Project Manager: Kevin Herring
 Price Points #: 10839-3/10839-2

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER ooh-

Site Location: GA STATE

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)	SAMPLE CONDITIONS																									
		DATE	TIME	DATE	TIME			Unpreserved	H ₂ SO ₄	HNO ₃				HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate	TOC	App. 18&1V Metals 6010/6020*	PAD 226/226	Major Ions	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)												
1	MMW-232	WT-G	9/17	17:18		0																																	
2	MMW-230	WT-G	9/17	17:18		0																																	
3	MMW-42	WT-G	9/17	17:18		0																																	
4	MMW-34B	WT-G	9/17	17:18		0																																	
6	MMW-36	WT-G	9/17	17:18		0																																	
6	MMW-38D	WT-G	9/17	17:18		0																																	
7	MMW-37D	WT-G	9/17	17:18		0																																	
8	PD-02	WT-G	9/17	17:18		0																																	
10																																							
11																																							
12																																							

Additional handwritten notes in table:
 - Major Ions: AR, Beand AK, Fe, Mg, Mn, K, Na, Sulfide
 - One sample set submitted for HGWA-1, HGWA-2, and HGWA-3 but results will be reported for AP-1/2/3 SDCs
 - Temp in °C: 5.7
 - Received on Ice (Y/N): Y
 - Custody Sealed Cooler (Y/N): Y
 - Samples Intact (Y/N): Y

ADDITIONAL COMMENTS:

Please note dry weights, strike through any wells not sampled, and note when the last sample for the event has been taken.
 *Headwater, Bay, Bar, B, CA, Ca, C, Ca, Ph, S, SO, Sq, Tl
 Major Ions: AR, Beand AK, Fe, Mg, Mn, K, Na, Sulfide

One sample set submitted for HGWA-1, HGWA-2, and HGWA-3 but results will be reported for AP-1/2/3 SDCs

SAMPLER NAME AND SIGNATURE:
 PRINT Name of SAMPLER: Chad Rosso
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 9/17/2000



CHAIN-OF-CUSTODY / Analytical Request Document

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Page: **5** of **6**

Section A Required Client Information: Company: GA Power Address: Atlanta, GA Email to: SCS Contacts Phone: _____ Requested Date Delivered: 10 Day		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosynthetic Contacts Purchase Order No.: _____ Project Name: Plant Hammond AP-2 Semiannual Project Number: GW6581B		Section C Physical Information: Attention: Southern Co. Company Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Page Quota: _____ Release: _____ Date Project: Kevin Herring Manager: _____ Face Profile #: 10839-4/10839-2	
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 USE: _____			Site Location: _____ STATE: GA		

ITEM #	Section D Required Client Information	Valid Matrix Codes ORGANIC/WATER DW WATER WWT WASTE WATER WWT PULP/DOC WWT SCHEDULED OIL WPE WPE AIR AIR OTHER AIR TISSELE TISSELE	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 = 7.62	Price Project No./ Lab ID: 92445640		
					DATE	TIME									DATE	TIME
1	MM-42D		WT G		9/17	1345		21	7	3	3	1				
2	MM-43D		WT G						7	3	3	1				
3	MM-44D		WT G		9/17	1846			7	3	3	1				
4	FB-02		WT G						7	3	3	1				
5																
6																
7																
8																
9																
10																
11																
12																

ADDITIONAL COMMENTS Please note dry wells, since through any waste not sampled, and note when the last sample for the event has been taken. Full App. III & IV Metals-Sb, As, Ba, Ba, B, Cd, Ca, Cr, Co, Cu, Pb, U, Hg, Mn, Se, Ti Major ions = Alk, Bicarb, Alk, Fe, Mg, Mn, K, Na, Sulfide One sample set submitted for HGMVA-1, HGMVA-2, HGMVA-3, MM-43D, MM-44D but they will be reported for AP-1/2/3 SDCS		RELINQUISHED BY / AFFILIATION Chad R. B. [Signature] 9/17 2000 9/18/10 1017 9/18/10 1346 9/18/10 1346		ACCEPTED BY / AFFILIATION [Signature] 9/17 2000 9/18/10 1017 9/18/10 1346 9/18/10 1346		SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Chad R. B. [Signature] SIGNATURE of SAMPLER: [Signature]		DATE SIGNED (MM/DD/YYYY) 9/17/2010		DATE 9/17/2010		TIME 1346		TEMPERATURE _____		RECEIVED ON ICE (Y/N) _____		CUSTODY SEALED COOLER (Y/N) _____		SAMPLES INTACT (Y/N) _____	
--	--	---	--	--	--	---	--	--	--	--------------------------	--	---------------------	--	-----------------------------	--	---------------------------------------	--	---	--	--------------------------------------	--



CHAIN-OF-CUSTODY / Analytical Request Document

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

6 of 6

Section A
 Required Client Information
 Company: GA Power
 Address: Atlanta, GA
 Email To: SCS Contacts
 Project: SCS Contacts
 Requested Date Default: 10 Day

Section B
 Required Project Information
 Report To: SCS Contacts
 Copy To: Geosyntec Contacts
 Project Name: Plant Hammond AP-2 Semiannual
 Project Number: GW6551B

Section C
 Invoicing Information
 Attention: Southern Co.
 Company Name:
 Address:
 Project Name:
 Reference:
 User Project: Kevin Herring
 Manager:
 Fax Number: 10839-3/10839-2

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER (see--)
 Site Location: GA
 STATE: GA

ITEM #	Valid Matrix Codes MUTUAL DOMESTIC WATER WASTE WATER WASTE WATER PRODUCT SEWAGE WHITE AIR OTHER 75	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
				DATE	TIME	DATE							
1		MMW-22	WT-G					Unpreserved	Chloride, Fluoride, Sulfate	N			
2		MMW-23B	WT-G					H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	TDS	N			
3		MMW-33	MUT-G						App. III&IV Metals 6010/6020*	N			
4		MMW-34D	WT-G						RAO 228/228	N			
5		MMW-36	WT-G						Major Ions	N			
6		MMW-36D	WT-G							N			
7		MMW-37D	WT-G							N			
8		FD-02	WT-G	9-17-12						X			
9										X			
10										X			
11										X			
12										X			

ADDITIONAL COMMENTS
 Please note dry weight, strike through any weight not sampled, and note when the last sample for the event has been taken.
 *Handwritten: "Major ions" - Alk, Bicarb, Alk, Fe, Mg, Mn, K, Na, Sulfide
 One sample set submitted for HENWA-1, HENWA-2, and HENWA-3 but results will be reported for AP-1/2/3 SDCs

RELINQUISHED BY / AFFILIATION
 Date: 9/17/12
 Time: 1345
 Signature: [Handwritten Signature]

ACCEPTED BY / AFFILIATION
 Date: 9/17/12
 Time: 1835
 Signature: [Handwritten Signature]

SAMPLE CONDITIONS
 Temp in °C: 13.45
 Received on Ice (Y/N): Y
 Custody Sealed Cooler (Y/N): Y
 Samples Intact (Y/N): Y

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

F:\ALL-Q-02Rev.07, 15-F-06-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 2 of 3

Section A: Required Client Information: Company: GA Power, Address: Atlanta, GA, Report To: Geosynthetic Contacts, etc.

Table with 2 columns: Section B (Purchase Order No., Project Name, Project Number) and Section C (Process Information, Attention, Company Name, Address, Contact Person/Phone).

Main data table with columns: ITEM #, Sample ID, Matrix Code, Sample Type, Date/Time, Sample Temp, # of Containers, Preservatives, Analysis Test, Requested Analytes, Residual Chlorine, and Sample Conditions.

ADDITIONAL COMMENTS section containing handwritten notes such as 'RECEIVED BY / AFFILIATION', 'DATE', and 'TIME' for various samples.

SAMPLER NAME AND SIGNATURE section with fields for printer name, signature, date, and time.

Important Note: By signing this form you are accepting... \$1.50 per month for any notices not paid within 30 days.

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

Page: 2 of 3

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

Section B Requested Project Information
Report To: SCS Contacts
Copy To: Geosyntec Contacts

Section C Project Information
Project Name: Plant Hammond AP-2 Semiannual
Company Name: Southern Co.
Address: Atlanta, GA

Requested Due Date/TIME: 10 Day
Requested Analysis Filtered (Y/N)

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER USE

Site Location STATE: GA

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	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)
					DATE	TIME					DATE	TIME	Chloride, Fluoride, Sulfate	TDS	
1	MMW-22	WATER	WT	G	09-21-20	1300	24	7	3	3					
2	MMW-23D	WASTE WATER	WW	G											
3	MMW-33	WASTE WATER	WW	G											
4	MMW-34D	WASTE WATER	WW	G											
5	MMW-35	WASTE WATER	WW	G											
6	MMW-36D	WASTE WATER	WW	G											
7	MMW-37D	WASTE WATER	WW	G											
8	CD-02	OTHER	OT	G											
9															
10															
11															
12															

Section D Required Client Information
Matrix Code: WT
Sample ID: (A-Z, 0-9, -)
Sample ID must be unique

ADDITIONAL COMMENTS
RELINQUISHED BY / AFFILIATION
DATE
TIME
ACCEPTED BY / AFFILIATION
DATE
TIME

Relinquished by: W. H. THURMAN / GEOSYNTEC
Date: 09-21-20
Time: 1850
Accepted by: W. H. THURMAN / SCS
Date: 09-21
Time: 1850

Relinquished by: W. H. THURMAN / GEOSYNTEC
Date: 09-21-20
Time: 1850
Accepted by: W. H. THURMAN / SCS
Date: 09-21
Time: 1850

SAMPLER NAME AND SIGNATURE
PRINT NAME OF SAMPLER: W. H. THURMAN
SIGNATURE OF SAMPLER: [Signature]
DATE SIGNED (MM/DD/YYYY): 09-21-20

SAMPLE CONDITIONS
Temp in °C: 11
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 Pace's 10 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 10 days.
F-ALL-Q-020rev.07, 15-Feb-2007



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

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

Section B
Required Project Information:
Project To: SCS Contacts
Copy To: Geosyntec Contacts

Section C
Invoicing Information:
Address: Southern Co.
Company Name: Southern Co.

Page: 1 of 1

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

Section B
Required Project Information:
Project To: SCS Contacts
Copy To: Geosyntec Contacts

Section C
Invoicing Information:
Address: Southern Co.
Company Name: Southern Co.

Section D
Required Project Information:
Purchase Order No.:
Project Name: Plant Hammond AP-2-Semiannual
Project Number: GW68818
Requested Date DETRIAF: 30 Day

Section E
Requested Analysis Filtered (VIN)

Section F
Regulatory Agency:
NPS GROUND WATER DRINKING WATER
UST RCRA OTHER

Section G
Site Location:
STATE: GA

ITEM #	Sections 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	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Analysis Test Chloride, Fluoride, Sulfate TDS App. III&IV Metals 6010/8020 RAD 226/228 Major Ions	Residual Chlorine (Y/N)	pH
			DATE	TIME	DATE						
1	MMW-22	WT G									
2	MMW-23B	WT G									
3	MMW-23	WT G									
4	MMW-34D	WT G	9-25-20	16:30							
5	MMW-35	WT G									
6	MMW-36D	WT G	9-25-20	11:15							
7	MMW-37D	WT G	9-28-20	08:50							
8	SD-02	WT G									
9	MMW-24B FILTERED	WT G	9-25-20	17:00							
10											
11											
12											

ADDITIONAL COMMENTS:
Please note dry wells, acids through any wells not sampled, and note when the last sample for the acid has been taken.
Major ions = Alk, Bicarb Alk, Fe, Mg, Mn, K, Na, Sulfide
One sample set submitted for HGMVA-1, HGMVA-2, and HGMVA-3 but results will be reported for AP-1/2/3 SIDS

REIMBURSED BY / AFFILIATION:
WSPQR THUNDER / CONTRACT
9-25-20 18:10
9-25-20 18:10
9-25-20 18:10
9-25-20 18:10
9-25-20 18:10
9-25-20 18:10
9-25-20 18:10
9-25-20 18:10
9-25-20 18:10
9-25-20 18:10
9-25-20 18:10

ACCEPTED BY / AFFILIATION:
9-23-20 18:10
9-23-20 18:10
9-23-20 18:10
9-23-20 18:10
9-23-20 18:10
9-23-20 18:10
9-23-20 18:10
9-23-20 18:10
9-23-20 18:10
9-23-20 18:10
9-23-20 18:10

SAMPLER NAME AND SIGNATURE:
WSPQR THUNDER
WSPQR THUNDER
WSPQR THUNDER
WSPQR THUNDER
WSPQR THUNDER
WSPQR THUNDER
WSPQR THUNDER
WSPQR THUNDER
WSPQR THUNDER
WSPQR THUNDER
WSPQR THUNDER

DATE SIGNED (MM/DD/YY):
9-23-20
9-23-20
9-23-20
9-23-20
9-23-20
9-23-20
9-23-20
9-23-20
9-23-20
9-23-20
9-23-20

PRINT Name of SAMPLER: WSPQR THUNDER
SIGNATURE OF SAMPLER: WSPQR THUNDER
DATE SIGNED (MM/DD/YY): 9-23-20

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 10/6/2020
Worklist: 56393
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009755
MB concentration:	0.119
M/B Counting Uncertainty:	0.159
MB MDC:	0.326
MB Numerical Performance Indicator:	1.46
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	Y	N
Count Date:	10/7/2020	LCSD56393
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):	4.763	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.553	
LCSD Counting Uncertainty (pCi/L, g, F):	0.770	
Numerical Performance Indicator:	-0.53	
Percent Recovery:	95.58%	
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.	
	Y	N
Sample I.D.:	92495649004	92495649004
Duplicate Sample I.D.:	92495649004DUP	92495649004DUP
Sample Result (pCi/L, g, F):	0.205	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.210	
Sample Duplicate Result (pCi/L, g, F):	0.239	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.276	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.193	
Duplicate Status vs Numerical Indicator:	15.40%	
Duplicate Status vs RPD:	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:</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>Matrix Spike Duplicate Result 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>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>

AM 10/17/2020

On 10.7.20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 10/6/2020
Worklist: 56393
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009755
MB concentration:	0.119
M/B Counting Uncertainty:	0.159
MB MDC:	0.326
MB Numerical Performance Indicator:	1.46
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	Y
LCS56393	LCS56393
Count Date:	10/7/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.510
Target Conc. (pCi/L, g, F):	4.718
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.593
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.790
Numerical Performance Indicator:	-0.31
Percent Recovery:	97.35%
Status vs Numerical Indicator:	N/A
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS56393
Duplicate Sample I.D.:	LCS56393
Sample Result (pCi/L, g, F):	4.553
Sample Duplicate Result (pCi/L, g, F):	0.770
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.593
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.071
Duplicate RPD:	1.83%
Duplicate Status vs Numerical Indicator:	N/A
% RPD Limit:	25%

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

Comments:

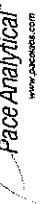
Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F):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

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

LAM 10/17/2020

DW (501-20)

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 10/6/2020
Worklist: 56394
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009756
MB Concentration:	0.092
MB Counting Uncertainty:	0.177
MB MDC:	0.408
MB Numerical Performance Indicator:	1.02
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSID (Y or N)?	Y
Count Date:	10/7/2020	LCSID56394	10/6/2020
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):	0.514		0.512
Target Conc. (pCi/L, g, F):	4.675		4.692
Uncertainty (Calculated):	0.056		0.056
Result (pCi/L, g, F):	3.980		4.462
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.760		0.322
Numerical Performance Indicator:	-1.79		-1.38
Percent Recovery:	85.14%		95.08%
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		LCSID (Y or N)?	Y
Sample I.D.:	LCS56394		
Duplicate Sample I.D.:	LCS56394		
Sample Result (pCi/L, g, F):	3.980		
Sample Result Counting Uncertainty (pCi/L, g, F):	0.760		
Sample Duplicate Result (pCi/L, g, F):	4.452		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.322		
Are sample and/or duplicate results below RL?	NO		
Duplicate Numerical Performance Indicator:	-1.143		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	11.00%		
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:			
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:			

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:	

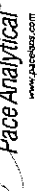
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

LAM 10/7/2020

DW 10.7.20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 10/6/2020
Worklist: 56394
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009756
MB concentration:	0.092
MB Counting Uncertainty:	0.177
MB MDC:	0.408
MB Numerical Performance Indicator:	1.02
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSD56394	LCSD56394
Count Date:	10/7/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.514
Target Conc. (pCi/L, g, F):	4.675
Uncertainty (Calculated):	0.056
Result (pCi/L, g, F):	3.980
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.760
Numerical Performance Indicator:	-1.79
Percent Recovery:	85.14%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92495887002
Duplicate Sample I.D.:	92495887002DUP
Sample Result (pCi/L, g, F):	0.124
Sample Result Counting Uncertainty (pCi/L, g, F):	0.339
Sample Duplicate Result (pCi/L, g, F):	0.304
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.234
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-0.859
Duplicate RPD:	84.36%
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:

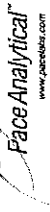
~~**Duplicate results are reported due to unacceptable precision~~ N/A VAM 10/7/2020

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>MSD Aliquot (L, g, F):</p> <p>MS Target Conc. (pCi/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>Sample Matrix Spike Duplicate Result:</p> <p>Matrix Spike Duplicate Result 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>Sample Matrix Spike Duplicate Result:</p> <p>Matrix Spike Result Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result 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>

VAM 10/7/2020
TAR_56394_W.xls
Total Alpha Radium (R104-3 11Feb2019).xls
Qu 10.7.20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 10/7/2020
Worklist: 56395
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009757
MB concentration:	1.555
M/B Counting Uncertainty:	0.461
MB MDC:	0.438
MB Numerical Performance Indicator:	6.61
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Fail

Laboratory Control Sample Assessment	
LCSD (Y or N)?	Y
LCSD56395	LCSD56395
Count Date:	10/8/2020
Decay Corrected Spike Concentration (pCi/mL):	19.033
Volume Used (mL):	24.044
Aliquot Volume (L, g, F):	0.10
Target Conc. (pCi/L, g, F):	0.502
Uncertainty (Calculated):	4.788
Result (pCi/L, g, F):	0.057
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	5.326
Numerical Performance Indicator:	0.804
Percent Recovery:	1.31
Status vs Numerical Indicator:	111.23%
Upper % Recovery Limits:	N/A
Lower % Recovery Limits:	Pass
	125%
	75%

Duplicate Sample Assessment	
Sample ID:	LCSD56395
Duplicate Sample ID:	LCSD56395
Sample Result (pCi/L, g, F):	5.210
Sample Duplicate Result (pCi/L, g, F):	0.817
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	5.326
Are sample and/or duplicate results below RL?	0.804
Duplicate Numerical Performance Indicator:	NO
Duplicate (Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	-0.197
Duplicate Status vs Numerical Indicator:	2.53%
Duplicate Status vs RPD:	N/A
% RPD Limit:	Pass
	25%

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):	Spike I.D.:
Spike Volume Used in MS (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 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):
MSD Spike Uncertainty (calculated):	MS/MSD Upper % Recovery Limits:
Sample Result:	MS/MSD Lower % Recovery Limits:
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 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:	Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Duplicate Numerical Performance Indicator:	Duplicate Numerical Performance Indicator:
Duplicate (Based on the Percent Recoveries) MS/MSD Duplicate RPD:	Duplicate (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:

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.

LAM 10/19/2020

AMT
10/19/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 10/7/2020
Worklist: 56395
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009757
MB concentration:	1.555
M/B Counting Uncertainty:	0.461
MB MDC:	0.438
MB Numerical Performance Indicator:	6.61
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Fail*

Laboratory Control Sample Assessment	
LCS# (Y or N)?	N
LCS56395	LCS56395
Count Date:	10/8/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.500
Target Conc. (pCi/L, g, F):	4.804
Uncertainty (Calculated):	0.068
Result (pCi/L, g, F):	5.210
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.817
Numerical Performance Indicator:	0.97
Percent Recovery:	106.45%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92495890015
Duplicate Sample I.D.:	92495890015DUP
Sample Result (pCi/L, g, F):	0.026
Sample Result Counting Uncertainty (pCi/L, g, F):	0.298
Sample Duplicate Result (pCi/L, g, F):	0.062
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.162
Are sample and/or duplicate results below RL?	See Below #2
Duplicate Numerical Performance Indicator:	-0.206
Duplicate RPD:	80.49%
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:

*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.

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

LAM 10/9/2020

LAM 10/9/2020

OK
10/9/2020

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-226
Analyst: LAL
Date: 10/13/2020
Worklist: 56587
Matrix: DW

Method Blank Assessment	
MB Sample ID	2018610
MB Concentration:	-0.005
MB Counting Uncertainty:	0.135
MB MDC:	0.392
MB Numerical Performance Indicator:	-0.08
MB Status vs. Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	Y
Count Date:		LCS56587	LCS56587
Spike I.D.:		10/14/2020	10/14/2020
Decay Corrected Spike Concentration (pCi/mL):		19-033	19-033
Volume Used (mL):		24.044	24.044
Aliquot Volume (L, g, F):		0.10	0.10
Target Conc. (pCi/L, g, F):		0.508	0.512
Uncertainty (Calculated):		4.732	4.697
Result (pCi/L, g, F):		0.057	0.066
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		4.419	4.459
Numerical Performance Indicator:		0.793	0.781
Percent Recovery:		-0.77	-0.59
Status vs Numerical Indicator:		93.40%	94.94%
Status vs Recovery:		N/A	N/A
Upper % Recovery Limits:		Pass	Pass
Lower % Recovery Limits:		125%	125%
		75%	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS56587
Duplicate Sample I.D.:	LCS56587
Sample Result (pCi/L, g, F):	4.419
Sample Result Counting Uncertainty (pCi/L, g, F):	0.793
Sample Duplicate Result (pCi/L, g, F):	4.459
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.781
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.071
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	1.64%
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:			
Sample Matrix Spike 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.:	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample MS I.D.:	32497113001
Sample MSD I.D.:	32497113001DUP
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:	

Handwritten signature: OWA 10/14/2020

Handwritten date: 10/14/2020

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-226
Analyst: LAL
Date: 10/13/2020
Worklist: 56587
Matrix: DW

Method Blank Assessment	
MB Sample ID	2016810
MB concentration:	-0.005
M/B Counting Uncertainty:	0.135
MB MDC:	0.392
MB Numerical Performance Indicator:	-0.08
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?		N
	LCS56587	LCS56587	
Count Date:	10/14/2020		LCS56587
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):	4.732		
Uncertainty (Calculated):	0.057		
Result (pCi/L, g, F):	4.419		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.793		
Numerical Performance Indicator:	-0.77		
Percent Recovery:	93.40%		
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.:	92497113001
Duplicate Sample I.D.:	92497113001DUP
Sample Result (pCi/L, g, F):	0.393
Sample Duplicate Result (pCi/L, g, F):	0.257
Sample Duplicate Result (pCi/L, g, F):	0.393
Sample Duplicate Result (pCi/L, g, F):	0.369
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-0.003
Duplicate RPD:	0.20%
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 Matrix Spike Result: Sample Matrix Spike Duplicate 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:		

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: 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:

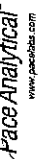
Handwritten signature and date: 10/14/2020

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

Comments:

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: 56676
Matrix: DW

Method Blank Assessment	
MB Sample ID	2021109
MB Concentration:	0.106
MB Counting Uncertainty:	0.161
MB MDC:	0.345
MB Numerical Performance Indicator:	1.28
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?		N
	LCS56676	LCS95676	
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):	0.516		
Target Conc. (pCi/L, g, F):	4.655		
Uncertainty (Calculated):	0.056		
Result (pCi/L, g, F):	4.795		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.767		
Numerical Performance Indicator:	0.36		
Percent Recovery:	103.01%		
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.:	92497524034
Duplicate Sample I.D.:	92497524034DUP
Sample Result (pCi/L, g, F):	0.130
Sample Duplicate Result (pCi/L, g, F):	0.179
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.326
Ave. sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-1.205
Duplicate RPD:	85.93%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail**
% RPD Limit:	25%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): 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. 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 Percent Recoveries MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

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

Comments:

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

LAM 10/15/2020

10/15/2020

Quality Control Sample Performance Assessment



Analyst: Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 10/14/2020
Worklist: 56680
Matrix: WT

Method Blank Assessment	
MB Sample ID	2021120
MB concentration:	0.336
MB 2 Sigma CSU:	0.463
MB MDC:	0.993
MB Numerical Performance Indicator:	1.42
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	Y
Count Date:	10/16/2020	LCS/56680	10/16/2020
Spike I.D.:	20-030	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.004	38.004	38.004
Volume Used (mL):	0.10	0.10	0.10
Aliquot Volume (L, g, F):	0.814	0.821	0.821
Target Conc. (pCi/L, g, F):	4.668	4.627	4.627
Uncertainty (Calculated):	0.229	0.227	0.227
Result (pCi/L, g, F):	3.950	4.745	4.745
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.924	1.105	1.105
Numerical Performance Indicator:	-1.48	102.54%	102.54%
Percent Recovery:	84.63%	N/A	N/A
Status vs Numerical Indicator:	N/A	Pass	Pass
Status vs Recovery:	Pass	135%	135%
Upper % Recovery Limits:	135%	60%	60%
Lower % Recovery Limits:	60%		

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Sample I.D.:	LCS56680		
Duplicate Sample I.D.:	LCS/56680		
Sample Result (pCi/L, g, F):	3.950		
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.924		
Sample Duplicate Result (pCi/L, g, F):	4.745		
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:	-1.082		
Duplicate Percent Recoveries:	19.14%		
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:		
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:
Duplicate Percent Recoveries:
Duplicate Status vs Numerical Indicator:
Duplicate Status vs RPD:
% RPD Limit:

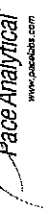
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

10/19/2020

VAL

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow

Test: Ra-228
Analyst: VAL
Date: 10/5/2020
Worklist: 56398
Matrix: WT

Method Blank Assessment	
MB Sample ID	2009760
MB concentration:	0.796
MB 2 Sigma CSU:	0.463
MB MDC:	0.637
MB Numerical Performance Indicator:	3.37
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	Y
		LCS56398	10/9/2020
Count Date:		20-030	20-030
Spike I.D.:		38.093	38.093
Decay Corrected Spike Concentration (pCi/mL):		0.10	0.10
Volume Used (mL):		0.805	0.828
Aliquot Volume (L, g, F):		4.734	4.802
Target Conc. (pCi/L, g, F):		0.232	0.225
Uncertainty (Calculated):		5.032	5.803
LCS/LCSD 2, Sigma CSU (pCi/L, g, F):		1.133	1.279
Numerical Performance Indicator:		0.51	1.81
Percent Recovery:		106.30%	126.11%
Status vs Numerical Indicator:		N/A	N/A
Status vs Recovery:		Pass	Pass
Upper % Recovery Limits:		135%	135%
Lower % Recovery Limits:		60%	60%

Duplicate Sample Assessment		LCS/D	Y or N?
Sample I.D.:		LCS56398	
Duplicate Sample I.D.:		LCS56398	
Sample Result (pCi/L, g, F):		5.032	
Sample Duplicate Result (pCi/L, g, F):		1.133	
Sample Duplicate Result 2, Sigma CSU (pCi/L, g, F):		5.803	
Sample Duplicate Result 2, Sigma CSU (pCi/L, g, F):		1.279	
Are sample and/or duplicate results below RL?		NO	
Duplicate Numerical Performance Indicator:		-0.884	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:		17.04%	
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 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:

*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.

16/12/20

10/12/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 10/6/2020
Worklist: 56396
Matrix: WT

Method Blank Assessment	
MB Sample ID	2009758
MB concentration:	0.318
M/B 2 Sigma CSU:	0.350
MB MDC:	0.730
MB Numerical Performance Indicator:	1.79
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	Y
Count Date:		LCS56396	10/7/2020
Spike I.D.:		LCS56396	20-030
Decay Corrected Spike Concentration (pCi/mL):			38.119
Volume Used (mL):			0.10
Aliquot Volume (L, g, F):			0.808
Target Conc. (pCi/L, g, F):			4.716
Uncertainty (Calculated):			3.363
Result (pCi/L, g, F):			0.231
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):			0.942
Numerical Performance Indicator:			-3.04
Percent Recovery:			71.31%
Status vs Numerical Indicator:			N/A
Status vs Recovery:			Pass
Upper % Recovery Limits:			135%
Lower % Recovery Limits:			60%

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below:	
Sample I.D.:	LCS56396		
Duplicate Sample I.D.:	LCS56396		
Sample Result (pCi/L, g, F):	3.815		
Sample Duplicate Result (pCi/L, g, F):	0.942		
Sample Duplicate Result (pCi/L, g, F):	3.353		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.842		
Are sample and/or duplicate results below RL?	NO		
Duplicate Numerical Performance Indicator:	0.702		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	12.97%		
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.

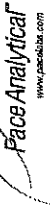
Comments:

CMB
10/19/2020

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

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

Quality Control Sample Performance Assessment



Test: Ra-228
Analyst: VAL
Date: 10/5/2020
Worklist: 56397
Matrix: WT

Method Blank Assessment	
MB Sample ID	2009759
MB concentration:	0.390
M/B 2 Sigma CSU:	0.341
MB MDC:	0.687
MB Numerical Performance Indicator:	2.24
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Analyst Must Manually Enter All Fields Highlighted in Yellow.

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:		

LCS/D (Y or N)?	Y
LCS56397	LCS56397
10/8/2020	10/8/2020
20-030	20-030
38.106	38.106
0.10	0.10
0.821	0.821
4.644	4.644
0.228	0.228
4.266	4.266
0.974	0.974
-0.74	-0.74
91.86%	91.86%
N/A	N/A
Pass	Pass
135%	135%
60%	60%

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

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

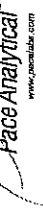
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Handwritten note: OK to 10/10/20

Handwritten note: JTY 10-9-20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56588
Matrix: WT

Method Blank Assessment	
MB Sample ID	2016812
MB concentration:	0.888
MB 2 Sigma CSU:	0.360
MB MDC:	0.600
MB Numerical Performance Indicator:	4.58
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment		LCSID (Y or N)?	Y
Count Date:		LCS56588	
Spike I.D.:		10/15/2020	
Decay Corrected Spike Concentration (pCi/mL):		20-030	
Volume Used (mL):		38.018	
Aliquot Volume (L, g, F):		0.10	
Target Conc. (pCi/L, g, F):		0.817	
Uncertainty (Calculated):		4.654	
Result (pCi/L, g, F):		5.189	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):		1.207	
Numerical Performance Indicator:		0.85	
Percent Recovery:		114.37%	
Status vs Numerical Indicator:		N/A	
Status vs Recovery:		Pass	
Upper % Recovery Limits:		135%	
Lower % Recovery Limits:		60%	

Duplicate Sample Assessment		LCSID	Y
Duplicate Sample I.D.:		LCS56588	
Duplicate Sample I.D.:		LCS56588	
Sample Result (pCi/L, g, F):		5.189	
Sample Result 2 Sigma CSU (pCi/L, g, F):		1.207	
Sample Duplicate Result (pCi/L, g, F):		5.370	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		1.191	
Are sample and/or duplicate results below RL?		NO	
Duplicate Numerical Performance Indicator:		-0.210	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:		2.55%	
Duplicate Status vs Numerical Indicator:		Pass	
Duplicate Status vs RPD:		Pass	
% RPD Limit:		36%	

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

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

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 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:	
(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

November 30, 2020

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

RE: Project: HAMMOND AP-2 BKG 02
Pace Project No.: 92505497

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-2 BKG 02

Pace Project No.: 92505497

Pace Analytical Services Charlotte

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

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

Pace Analytical Services Asheville

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

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

Pace Analytical Services Peachtree Corners

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

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

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SAMPLE SUMMARY

Project: HAMMOND AP-2 BKG 02

Pace Project No.: 92505497

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92505497001	HGWA-43D	Water	11/10/20 10:21	11/11/20 12:12
92505497002	EB-01	Water	11/10/20 16:10	11/11/20 12:12
92505497003	HGWA-44D	Water	11/10/20 15:55	11/11/20 12:12
92505497004	HGWA-44D FILTERED	Water	11/10/20 16:30	11/11/20 12:12
92505497005	HGWA-42D	Water	11/11/20 15:25	11/12/20 16:47

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 BKG 02

Pace Project No.: 92505497

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92505497001	HGWA-43D	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
92505497002	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
92505497003	HGWA-44D	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
92505497004	HGWA-44D FILTERED	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
92505497005	HGWA-42D	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-2 BKG 02

Pace Project No.: 92505497

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92505497001	HGWA-43D					
	Performed by	CUSTOMER			11/12/20 08:59	
	pH	7.27	Std. Units		11/12/20 08:59	
EPA 6010D	Calcium	63.3	mg/L	1.0	11/19/20 09:40	
EPA 6020B	Antimony	0.00043J	mg/L	0.0030	11/19/20 18:47	B
EPA 6020B	Arsenic	0.0021J	mg/L	0.0050	11/19/20 18:47	
EPA 6020B	Barium	0.25	mg/L	0.010	11/19/20 18:47	
EPA 6020B	Boron	0.057J	mg/L	0.10	11/19/20 18:47	
EPA 6020B	Lead	0.000069J	mg/L	0.0050	11/19/20 18:47	
EPA 6020B	Lithium	0.0013J	mg/L	0.030	11/19/20 18:47	
EPA 6020B	Molybdenum	0.0072J	mg/L	0.010	11/19/20 18:47	
SM 2450C-2011	Total Dissolved Solids	307	mg/L	10.0	11/13/20 14:21	
EPA 300.0 Rev 2.1 1993	Chloride	4.4	mg/L	1.0	11/14/20 16:04	
EPA 300.0 Rev 2.1 1993	Fluoride	0.19	mg/L	0.10	11/14/20 16:04	
EPA 300.0 Rev 2.1 1993	Sulfate	39.0	mg/L	1.0	11/14/20 16:04	
92505497002	EB-01					
SM 2450C-2011	Total Dissolved Solids	13.0	mg/L	10.0	11/13/20 14:21	
92505497003	HGWA-44D					
	Performed by	CUSTOMER			11/12/20 08:59	
	pH	7.84	Std. Units		11/12/20 08:59	
EPA 6010D	Calcium	33.6	mg/L	1.0	11/19/20 10:28	
EPA 6020B	Barium	0.38	mg/L	0.010	11/19/20 18:58	
EPA 6020B	Boron	0.29	mg/L	0.10	11/19/20 18:58	
EPA 6020B	Chromium	0.00089J	mg/L	0.010	11/19/20 18:58	
EPA 6020B	Lead	0.00020J	mg/L	0.0050	11/19/20 18:58	
EPA 6020B	Lithium	0.025J	mg/L	0.030	11/19/20 18:58	
EPA 6020B	Molybdenum	0.0018J	mg/L	0.010	11/19/20 18:58	
SM 2450C-2011	Total Dissolved Solids	287	mg/L	10.0	11/13/20 14:21	
EPA 300.0 Rev 2.1 1993	Chloride	7.8	mg/L	1.0	11/14/20 16:33	
EPA 300.0 Rev 2.1 1993	Fluoride	0.59	mg/L	0.10	11/14/20 16:33	
EPA 300.0 Rev 2.1 1993	Sulfate	6.3	mg/L	1.0	11/14/20 16:33	
92505497004	HGWA-44D FILTERED					
	Performed by	CUSTOMER			11/12/20 08:59	
	pH	7.84	Std. Units		11/12/20 08:59	
EPA 6010D	Calcium	27.0	mg/L	1.0	11/19/20 10:34	
EPA 6020B	Barium	0.39	mg/L	0.010	11/19/20 19:04	
EPA 6020B	Boron	0.27	mg/L	0.10	11/19/20 19:04	
EPA 6020B	Lithium	0.027J	mg/L	0.030	11/19/20 19:04	
EPA 6020B	Molybdenum	0.0015J	mg/L	0.010	11/19/20 19:04	
SM 2450C-2011	Total Dissolved Solids	301	mg/L	10.0	11/13/20 14:22	
EPA 300.0 Rev 2.1 1993	Chloride	7.6	mg/L	1.0	11/14/20 16:47	
EPA 300.0 Rev 2.1 1993	Fluoride	0.58	mg/L	0.10	11/14/20 16:47	
EPA 300.0 Rev 2.1 1993	Sulfate	5.9	mg/L	1.0	11/14/20 16:47	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 BKG 02

Pace Project No.: 92505497

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92505497005	HGWA-42D					
	Performed by	CUSTOME			11/13/20 11:21	
		R				
	pH	7.68	Std. Units		11/13/20 11:21	
EPA 6010D	Calcium	44.4	mg/L	1.0	11/19/20 03:31	
EPA 6020B	Barium	0.18	mg/L	0.010	11/20/20 19:01	
EPA 6020B	Boron	0.058J	mg/L	0.10	11/20/20 19:01	
EPA 6020B	Chromium	0.00063J	mg/L	0.010	11/20/20 19:01	
EPA 6020B	Lead	0.000084J	mg/L	0.0050	11/20/20 19:01	
EPA 6020B	Lithium	0.0086J	mg/L	0.030	11/20/20 19:01	
SM 2450C-2011	Total Dissolved Solids	175	mg/L	10.0	11/17/20 16:04	
EPA 300.0 Rev 2.1 1993	Chloride	3.1	mg/L	1.0	11/18/20 06:25	
EPA 300.0 Rev 2.1 1993	Fluoride	0.10	mg/L	0.10	11/18/20 06:25	
EPA 300.0 Rev 2.1 1993	Sulfate	9.4	mg/L	1.0	11/18/20 06:25	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 BKG 02
Pace Project No.: 92505497

Sample: HGWA-43D Lab ID: 92505497001 Collected: 11/10/20 10:21 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		11/12/20 08:59		
pH	7.27	Std. Units			1		11/12/20 08:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	63.3	mg/L	1.0	0.070	1	11/16/20 11:00	11/19/20 09:40	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00043J	mg/L	0.0030	0.00028	1	11/19/20 08:40	11/19/20 18:47	7440-36-0	B
Arsenic	0.0021J	mg/L	0.0050	0.00078	1	11/19/20 08:40	11/19/20 18:47	7440-38-2	
Barium	0.25	mg/L	0.010	0.00071	1	11/19/20 08:40	11/19/20 18:47	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	11/19/20 08:40	11/19/20 18:47	7440-41-7	
Boron	0.057J	mg/L	0.10	0.0052	1	11/19/20 08:40	11/19/20 18:47	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	11/19/20 08:40	11/19/20 18:47	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	11/19/20 08:40	11/19/20 18:47	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	11/19/20 08:40	11/19/20 18:47	7440-48-4	
Lead	0.000069J	mg/L	0.0050	0.000036	1	11/19/20 08:40	11/19/20 18:47	7439-92-1	
Lithium	0.0013J	mg/L	0.030	0.00081	1	11/19/20 08:40	11/19/20 18:47	7439-93-2	
Molybdenum	0.0072J	mg/L	0.010	0.00069	1	11/19/20 08:40	11/19/20 18:47	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	11/19/20 08:40	11/19/20 18:47	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/19/20 08:40	11/19/20 18:47	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	11/16/20 08:00	11/18/20 13:55	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	307	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	4.4	mg/L	1.0	0.60	1		11/14/20 16:04	16887-00-6	
Fluoride	0.19	mg/L	0.10	0.050	1		11/14/20 16:04	16984-48-8	
Sulfate	39.0	mg/L	1.0	0.50	1		11/14/20 16:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 BKG 02
Pace Project No.: 92505497

Sample: EB-01		Lab ID: 92505497002		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-2 BKG 02

Pace Project No.: 92505497

Sample: HGWA-44D		Lab ID: 92505497003		Collected: 11/10/20 15:55	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		11/12/20 08:59		
pH	7.84	Std. Units			1		11/12/20 08:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	33.6	mg/L	1.0	0.070	1	11/16/20 11:00	11/19/20 10:28	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	11/19/20 08:40	11/19/20 18:58	7440-36-0	B
Arsenic	ND	mg/L	0.0050	0.00078	1	11/19/20 08:40	11/19/20 18:58	7440-38-2	
Barium	0.38	mg/L	0.010	0.00071	1	11/19/20 08:40	11/19/20 18:58	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	11/19/20 08:40	11/19/20 18:58	7440-41-7	
Boron	0.29	mg/L	0.10	0.0052	1	11/19/20 08:40	11/19/20 18:58	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	11/19/20 08:40	11/19/20 18:58	7440-43-9	
Chromium	0.00089J	mg/L	0.010	0.00055	1	11/19/20 08:40	11/19/20 18:58	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	11/19/20 08:40	11/19/20 18:58	7440-48-4	
Lead	0.00020J	mg/L	0.0050	0.000036	1	11/19/20 08:40	11/19/20 18:58	7439-92-1	
Lithium	0.025J	mg/L	0.030	0.00081	1	11/19/20 08:40	11/19/20 18:58	7439-93-2	
Molybdenum	0.0018J	mg/L	0.010	0.00069	1	11/19/20 08:40	11/19/20 18:58	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	11/19/20 08:40	11/19/20 18:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/19/20 08:40	11/19/20 18:58	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	11/16/20 08:00	11/18/20 14:00	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	287	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	7.8	mg/L	1.0	0.60	1		11/14/20 16:33	16887-00-6	
Fluoride	0.59	mg/L	0.10	0.050	1		11/14/20 16:33	16984-48-8	
Sulfate	6.3	mg/L	1.0	0.50	1		11/14/20 16:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 BKG 02
Pace Project No.: 92505497

Sample: HGWA-44D FILTERED		Lab ID: 92505497004		Collected: 11/10/20 16:30		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		11/12/20 08:59		
pH	7.84	Std. Units			1		11/12/20 08:59		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	27.0	mg/L	1.0	0.070	1	11/16/20 11:00	11/19/20 10:34	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 19:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	11/19/20 08:40	11/19/20 19:04	7440-38-2	
Barium	0.39	mg/L	0.010	0.00071	1	11/19/20 08:40	11/19/20 19:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	11/19/20 08:40	11/19/20 19:04	7440-41-7	
Boron	0.27	mg/L	0.10	0.0052	1	11/19/20 08:40	11/19/20 19:04	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	11/19/20 08:40	11/19/20 19:04	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	11/19/20 08:40	11/19/20 19:04	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	11/19/20 08:40	11/19/20 19:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	11/19/20 08:40	11/19/20 19:04	7439-92-1	
Lithium	0.027J	mg/L	0.030	0.00081	1	11/19/20 08:40	11/19/20 19:04	7439-93-2	
Molybdenum	0.0015J	mg/L	0.010	0.00069	1	11/19/20 08:40	11/19/20 19:04	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	11/19/20 08:40	11/19/20 19:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/19/20 08:40	11/19/20 19:04	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	11/16/20 08:00	11/18/20 14:02	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	301	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	7.6	mg/L	1.0	0.60	1		11/14/20 16:47	16887-00-6	
Fluoride	0.58	mg/L	0.10	0.050	1		11/14/20 16:47	16984-48-8	
Sulfate	5.9	mg/L	1.0	0.50	1		11/14/20 16:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 BKG 02
Pace Project No.: 92505497

Sample: HGWA-42D		Lab ID: 92505497005		Collected: 11/11/20 15:25		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 11:21		
pH	7.68	Std. Units			1		11/13/20 11:21		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	44.4	mg/L	1.0	0.070	1	11/18/20 15:19	11/19/20 03:31	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	11/19/20 08:40	11/20/20 19:01	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	11/19/20 08:40	11/20/20 19:01	7440-38-2	
Barium	0.18	mg/L	0.010	0.00071	1	11/19/20 08:40	11/20/20 19:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	11/19/20 08:40	11/20/20 19:01	7440-41-7	
Boron	0.058J	mg/L	0.10	0.0052	1	11/19/20 08:40	11/20/20 19:01	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	11/19/20 08:40	11/20/20 19:01	7440-43-9	
Chromium	0.00063J	mg/L	0.010	0.00055	1	11/19/20 08:40	11/20/20 19:01	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	11/19/20 08:40	11/20/20 19:01	7440-48-4	
Lead	0.000084J	mg/L	0.0050	0.000036	1	11/19/20 08:40	11/20/20 19:01	7439-92-1	
Lithium	0.0086J	mg/L	0.030	0.00081	1	11/19/20 08:40	11/20/20 19:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	11/19/20 08:40	11/20/20 19:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	11/19/20 08:40	11/20/20 19:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/19/20 08:40	11/20/20 19:01	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	11/23/20 08:20	11/23/20 13:45	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	175	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	3.1	mg/L	1.0	0.60	1		11/18/20 06:25	16887-00-6	
Fluoride	0.10	mg/L	0.10	0.050	1		11/18/20 06:25	16984-48-8	
Sulfate	9.4	mg/L	1.0	0.50	1		11/18/20 06:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 BKG 02

Pace Project No.: 92505497

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: 92505497001, 92505497002, 92505497003, 92505497004

METHOD BLANK: 3070802

Matrix: Water

Associated Lab Samples: 92505497001, 92505497002, 92505497003, 92505497004

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-2 BKG 02

Pace Project No.: 92505497

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: 92505497005

METHOD BLANK: 3074651 Matrix: Water

Associated Lab Samples: 92505497005

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
		92505496006 Result	MS Spike Conc.	MSD Spike Conc.	MS 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-2 BKG 02
Pace Project No.: 92505497

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: 92505497001, 92505497002, 92505497003, 92505497004

METHOD BLANK: 3075459 Matrix: Water
Associated Lab Samples: 92505497001, 92505497002, 92505497003, 92505497004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00037J	0.0030	0.00028	11/19/20 17:21	
Arsenic	mg/L	ND	0.0050	0.00078	11/19/20 17:21	
Barium	mg/L	ND	0.010	0.00071	11/19/20 17:21	
Beryllium	mg/L	ND	0.0030	0.000046	11/19/20 17:21	
Boron	mg/L	ND	0.10	0.0052	11/19/20 17:21	
Cadmium	mg/L	ND	0.0025	0.00012	11/19/20 17:21	
Chromium	mg/L	ND	0.010	0.00055	11/19/20 17:21	
Cobalt	mg/L	ND	0.0050	0.00038	11/19/20 17:21	
Lead	mg/L	ND	0.0050	0.000036	11/19/20 17:21	
Lithium	mg/L	ND	0.030	0.00081	11/19/20 17:21	
Molybdenum	mg/L	ND	0.010	0.00069	11/19/20 17:21	
Selenium	mg/L	ND	0.010	0.0016	11/19/20 17:21	
Thallium	mg/L	ND	0.0010	0.00014	11/19/20 17:21	

LABORATORY CONTROL SAMPLE: 3075460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.096	96	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.10	103	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3075461 3075462

Parameter	Units	92505482033 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.095	0.099	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-2 BKG 02

Pace Project No.: 92505497

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-2 BKG 02
Pace Project No.: 92505497

QC Batch: 581476 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92505497005

METHOD BLANK: 3075465 Matrix: Water
Associated Lab Samples: 92505497005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	11/20/20 18:15	
Arsenic	mg/L	ND	0.0050	0.00078	11/20/20 18:15	
Barium	mg/L	ND	0.010	0.00071	11/20/20 18:15	
Beryllium	mg/L	ND	0.0030	0.000046	11/20/20 18:15	
Boron	mg/L	ND	0.10	0.0052	11/20/20 18:15	
Cadmium	mg/L	ND	0.0025	0.00012	11/20/20 18:15	
Chromium	mg/L	ND	0.010	0.00055	11/20/20 18:15	
Cobalt	mg/L	ND	0.0050	0.00038	11/20/20 18:15	
Lead	mg/L	ND	0.0050	0.000036	11/20/20 18:15	
Lithium	mg/L	ND	0.030	0.00081	11/20/20 18:15	
Molybdenum	mg/L	ND	0.010	0.00069	11/20/20 18:15	
Selenium	mg/L	ND	0.010	0.0016	11/20/20 18:15	
Thallium	mg/L	ND	0.0010	0.00014	11/20/20 18:15	

LABORATORY CONTROL SAMPLE: 3075466

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	0.097	97	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.10	103	80-120	
Boron	mg/L	1	1.1	106	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.11	105	80-120	
Molybdenum	mg/L	0.1	0.099	99	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: 3075467 3075468

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505843001	Result	Conc.	Conc.								
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	2	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	99	101	75-125	2	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 BKG 02

Pace Project No.: 92505497

Parameter	Units	3075467		3075468		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92505843001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.019	0.1	0.1	0.12	0.12	97	98	75-125	1	20		
Beryllium	mg/L	ND	0.1	0.1	0.093	0.098	93	98	75-125	5	20		
Boron	mg/L	0.012J	1	1	0.97	0.99	96	98	75-125	2	20		
Cadmium	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	100	101	75-125	1	20		
Cobalt	mg/L	0.0015J	0.1	0.1	0.099	0.10	98	101	75-125	4	20		
Lead	mg/L	0.000064J	0.1	0.1	0.096	0.099	96	99	75-125	3	20		
Lithium	mg/L	0.0044J	0.1	0.1	0.10	0.11	96	102	75-125	6	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	102	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.10	96	100	75-125	4	20		
Thallium	mg/L	ND	0.1	0.1	0.095	0.099	95	99	75-125	4	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 BKG 02

Pace Project No.: 92505497

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: 92505497001, 92505497002, 92505497003, 92505497004

METHOD BLANK: 3071454 Matrix: Water
Associated Lab Samples: 92505497001, 92505497002, 92505497003, 92505497004

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-2 BKG 02
Pace Project No.: 92505497

QC Batch: 580803	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92505497005

METHOD BLANK: 3072015 Matrix: Water
Associated Lab Samples: 92505497005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	11/23/20 13:21	

LABORATORY CONTROL SAMPLE: 3072016

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072017 3072018

Parameter	Units	3072017		3072018		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	98	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 BKG 02

Pace Project No.: 92505497

QC Batch: 580910	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: 92505497005

METHOD BLANK: 3072613 Matrix: Water

Associated Lab Samples: 92505497005

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-2 BKG 02

Pace Project No.: 92505497

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: 92505497001, 92505497002, 92505497003, 92505497004

METHOD BLANK: 3072818

Matrix: Water

Associated Lab Samples: 92505497001, 92505497002, 92505497003, 92505497004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	11/13/20 14:19	

LABORATORY CONTROL SAMPLE: 3072819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	403	101	84-108	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 BKG 02

Pace Project No.: 92505497

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: 92505497001, 92505497002, 92505497003, 92505497004

METHOD BLANK: 3070250 Matrix: Water
 Associated Lab Samples: 92505497001, 92505497002, 92505497003, 92505497004

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	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.								
Chloride	mg/L	15.5	50	50	50	65.1	67.1	99	103	90-110	3	10	
Fluoride	mg/L	9.9	2.5	2.5	2.5	1.5	11.3	-333	58	90-110	152	10	M6, R1
Sulfate	mg/L	635	50	50	50	275	677	-721	83	90-110	85	10	M6, R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070254 3070255

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.								
Chloride	mg/L	2.7	50	50	50	53.8	54.8	102	104	90-110	2	10	
Fluoride	mg/L	0.065J	2.5	2.5	2.5	2.7	2.8	105	108	90-110	3	10	
Sulfate	mg/L	2.3	50	50	50	52.6	53.9	101	103	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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QUALITY CONTROL DATA

Project: HAMMOND AP-2 BKG 02
Pace Project No.: 92505497

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: 92505497005

METHOD BLANK: 3071887 Matrix: Water
Associated Lab Samples: 92505497005

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		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
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		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
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-2 BKG 02

Pace Project No.: 92505497

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-2 BKG 02
Pace Project No.: 92505497

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92505497001	HGWA-43D				
92505497003	HGWA-44D				
92505497004	HGWA-44D FILTERED				
92505497005	HGWA-42D				
92505497001	HGWA-43D	EPA 3010A	580529	EPA 6010D	580567
92505497002	EB-01	EPA 3010A	580529	EPA 6010D	580567
92505497003	HGWA-44D	EPA 3010A	580529	EPA 6010D	580567
92505497004	HGWA-44D FILTERED	EPA 3010A	580529	EPA 6010D	580567
92505497005	HGWA-42D	EPA 3010A	581313	EPA 6010D	581362
92505497001	HGWA-43D	EPA 3005A	581474	EPA 6020B	581563
92505497002	EB-01	EPA 3005A	581474	EPA 6020B	581563
92505497003	HGWA-44D	EPA 3005A	581474	EPA 6020B	581563
92505497004	HGWA-44D FILTERED	EPA 3005A	581474	EPA 6020B	581563
92505497005	HGWA-42D	EPA 3005A	581476	EPA 6020B	581564
92505497001	HGWA-43D	EPA 7470A	580637	EPA 7470A	580829
92505497002	EB-01	EPA 7470A	580637	EPA 7470A	580829
92505497003	HGWA-44D	EPA 7470A	580637	EPA 7470A	580829
92505497004	HGWA-44D FILTERED	EPA 7470A	580637	EPA 7470A	580829
92505497005	HGWA-42D	EPA 7470A	580803	EPA 7470A	582285
92505497001	HGWA-43D	SM 2450C-2011	580949		
92505497002	EB-01	SM 2450C-2011	580949		
92505497003	HGWA-44D	SM 2450C-2011	580949		
92505497004	HGWA-44D FILTERED	SM 2450C-2011	580949		
92505497005	HGWA-42D	SM 2450C-2011	580910		
92505497001	HGWA-43D	EPA 300.0 Rev 2.1 1993	580375		
92505497002	EB-01	EPA 300.0 Rev 2.1 1993	580375		
92505497003	HGWA-44D	EPA 300.0 Rev 2.1 1993	580375		
92505497004	HGWA-44D FILTERED	EPA 300.0 Rev 2.1 1993	580375		
92505497005	HGWA-42D	EPA 300.0 Rev 2.1 1993	580771		

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# : 92505497**

Courier: Commercial Fed Ex UPS USPS Client Other: _____



92505497

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 -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 <i>W</i>	9. <i>FB-01 is labeled EB-01 11/11/20 @ 1610</i>
-Includes Date/Time/ID/Analysis Matrix:	
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: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 2

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 Inocia Information Address: Southern Co.	
Email To: SCS Contacts Phone: [Blank] Requested Date/Time: 1st Day		Purchase Order No.: [Blank] Project Name: Plant Hammond AP-2 BKG 02 Project Number: GW655618		Company Name: [Blank] Address: [Blank] Person Name: [Blank] Reference: [Blank] Person Project Manager: Kevin Harting Person Phone #: 10839-4	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input checked="" type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER (specify):		Site Location STATE: GA		Requested Analyte Filtered (Y/N)	

ITEM #	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 H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other Analysis Test Chloride, Fluoride, Sulfate TDS Full App. III&IV Metals 6010/6020 RAD 226/228 Residual Chlorine (Y/N) DH= PH= Face Project No./ Lab ID.	Section E Valid Matrix Codes MATRIX CODE SAMPLE TYPE	COLLECTED		PRESERVED	ANALYZED	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS						
			COMPOSITE	DATE								TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)		
1	HGWA-42B	WT G	11/10	1021	18	5	2	3	X	X	X	X						
2	HGWA-43D	WT G	11/10	1021	18	5	2	3	X	X	X	X						
3	HGWA-44B	WT G	11/10	1021	18	5	2	3	X	X	X	X						
4	FB-01	WT G	11/10	1021	18	5	2	3	X	X	X	X						
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Additional Comments: [Blank]

Relinquished By / Affiliation: [Blank]

Date: [Blank]

Time: [Blank]

Accepted By / Affiliation: [Blank]

Date: [Blank]

Time: [Blank]

Sampler Name and Signature: [Blank]

Print Name of Sampler: [Blank]

Signature of Sampler: [Blank]

Date Signed: [Blank]

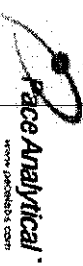
Handwritten: [Blank]

Temp in °C: [Blank]

Received on Ice (Y/N): [Blank]

Custody Sealed Cooler (Y/N): [Blank]

Samples Intact (Y/N): [Blank]



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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 of 2

Section A Required Client Information:
 Company: GA Power
 Address: Atlanta, GA
 Email To: SCS Contacts
 Phone: SCS Contacts
 Requested Due Date/TIME: 10 Day

Section B Required Project Information:
 Report To: SCS Contacts
 Copy To: Geosyntec Contacts
 Purchase Order No.:
 Project Name: Plant Hammond AP-2 BKG 02
 Project Number: GW65818

Section C Invoice Information:
 Attention: Southern Co.
 Company Name:
 Address:
 State:
 Zip Code:
 Project Name: Kevin Herring
 Project Manager:
 Project Phone #: 10839-4

REGULATORY AGENCY
 NPDES
 GROUND WATER
 UST
 RORA
 OTHER (See _____)
 Site Location: _____
 STATE: _____

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	Preservatives							Analysis Test					Residual Chlorine (Y/N)											
					DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate	TDS		Full App. III&IV Metals 6010/6020*	RAD 226/228									
1	HGWNA-42D	MDIX DW WATER WATER WATER PROTECT SCALES/SOLID SOIL WIRE AIR OTHER TISSUE	G	G				2																								
2	HGWNA-43D		G	G				2																								
3	HGWNA-44D		G	G	11/10/20	15:15		2																								
4	HGWNA-44D, Filtered		G	G	11/10/20	16:30		2																								

Section A ADDITIONAL COMMENTS:
 Please note dry wells, stiles through any wells not sampled, and note when the last sample for the event has been taken.
 *Full App. III & IV Metals-Stb. As Ba, Be, B, Cd, Cr, Cu, Pb, U, Hg, Mo, Se, Si

Section B RELINQUISHED BY / AFFILIATION:
 Shawn Jm Geosyntec
 Date: 11/11
 Time: 17:35

Section C ACCEPTED BY / AFFILIATION:
 Kevin Herring/SCC
 Date: 11/10
 Time: 17:42

DATE SIGNED: 11/10/20

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



CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 1

Section A Required Client Information

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

Section B Required Project Information

Report To: SCS Contacts
 Copy To: Geosynlec Contacts
 Purchase Order No.: _____
 Project Name: Plant Hammond AP-2 BKG 02
 Project Number: GW85861B

Section C Invoicing Information

Company Name: Southern Co.
 Address: _____
 Billing Code: _____
 Site Name: Kevin Heating
 Phone #: 10839-4

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
 Site Location: _____
 STATE: GA

Section D Required Client Information

VALID Matrix Codes
 MATRIX CODE
 DOMESTIC WATER DW
 WASTE WATER WW
 WASTE WATER PRODUCT P
 SOLIDWASTE SL
 OIL OIL
 WASTE WASTE
 AIR AIR
 OTHER OTHER
 TISSUE TISSUE

ITEM #	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 =	pH =
			DATE	TIME	DATE									
1	HGWA-42D	WT G	11/12/01	5:25	10	5	H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₅ Methanol Other	Chloride, Fluoride, Sulfate TDS Full App. HII&V Metals 6010/6020* RAD 228/228	N N N N	N	N	N	N	
2	HGWA-43D	WT G	11/12/01	5:25	10	5								
3	HGWA-44D	WT G	11/12/01	5:25	10	5								
4	FB-01	WT G	11/12/01	5:25	10	5								
5														
6														
7														
8														
9														
10														
11														
12														

ADDITIONAL COMMENTS

Planned rain dry wells, strike through any wells not sampled, and code when the best sample for the event has been taken.
 Full App. HII&V Metals: Sb, As, Ba, Bi, Cd, Cr, Co, Pb, U, Hg, Mo, Se, Tl

One sample set submitted for HGWA-43D and HGWA-44D but they will be reported for AP-1223 SDGs
 One sample set submitted for FB-01 but it will be reported for AP-1229A SDGs

RELINQUISHED BY / AFFILIATION: Shawn Lin / Geosynlec DATE: 11/12/01 TIME: 1402

ACCEPTED BY / AFFILIATION: Kevin Heating DATE: 11/12/01 TIME: 1402

SAMPLER NAME AND SIGNATURE: Shawn Lin

DATE SIGNED (MM/DD/YY): 11/12/01

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

December 17, 2020

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

RE: Project: HAMMOND AP-2 BKG 02 RADS
Pace Project No.: 92505468

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-2 BKG 02 RADS
Pace Project No.: 92505468

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-2 BKG 02 RADS

Pace Project No.: 92505468

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92505468001	HGWA-43D	Water	11/10/20 10:21	11/11/20 12:12
92505468002	EB-01	Water	11/10/20 16:10	11/11/20 12:12
92505468003	HGWA-44D	Water	11/10/20 15:55	11/11/20 12:12
92505468004	HGWA-44D FILTERED	Water	11/10/20 16:30	11/11/20 12:12
92505468005	HGWA-42D	Water	11/11/20 15:25	11/12/20 16:47

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92505468001	HGWA-43D	EPA 9315	CMC	1	PASI-PA
		EPA 9320	CMC	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92505468002	EB-01	EPA 9315	CMC	1	PASI-PA
		EPA 9320	CMC	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92505468003	HGWA-44D	EPA 9315	CMC	1	PASI-PA
		EPA 9320	CMC	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92505468004	HGWA-44D FILTERED	EPA 9315	CMC	1	PASI-PA
		EPA 9320	CMC	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92505468005	HGWA-42D	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-2 BKG 02 RADS

Pace Project No.: 92505468

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92505468001	HGWA-43D					
EPA 9315	Radium-226	0.150 ± 0.247 (0.551) C:76% T:NA	pCi/L		12/01/20 07:46	
EPA 9320	Radium-228	0.638 ± 0.432 (0.836) C:78% T:81%	pCi/L		12/03/20 11:11	
Total Radium Calculation	Total Radium	0.788 ± 0.679 (1.39)	pCi/L		12/17/20 15:41	
92505468002	EB-01					
EPA 9315	Radium-226	0.0159 ± 0.209 (0.560) C:78% T:NA	pCi/L		12/01/20 07:46	
EPA 9320	Radium-228	-0.184 ± 0.389 (0.935) C:74% T:80%	pCi/L		12/03/20 11:11	
Total Radium Calculation	Total Radium	0.0159 ± 0.598 (1.50)	pCi/L		12/17/20 15:41	
92505468003	HGWA-44D					
EPA 9315	Radium-226	0.244 ± 0.219 (0.389) C:95% T:NA	pCi/L		12/01/20 07:46	
EPA 9320	Radium-228	0.0487 ± 0.339 (0.777) C:78% T:90%	pCi/L		12/03/20 11:12	
Total Radium Calculation	Total Radium	0.293 ± 0.558 (1.17)	pCi/L		12/17/20 15:41	
92505468004	HGWA-44D FILTERED					
EPA 9315	Radium-226	0.0162 ± 0.234 (0.615) C:84% T:NA	pCi/L		12/01/20 07:46	
EPA 9320	Radium-228	0.0824 ± 0.364 (0.826) C:76% T:81%	pCi/L		12/03/20 11:12	
Total Radium Calculation	Total Radium	0.0986 ± 0.598 (1.44)	pCi/L		12/17/20 15:41	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92505468005	HGWA-42D					
EPA 9315	Radium-226	0.0316 ± 0.161 (0.401)	pCi/L		12/14/20 08:00	
EPA 9320	Radium-228	C:94% T:NA 1.25 ± 0.504 (0.814)	pCi/L		12/09/20 11:12	
Total Radium Calculation	Total Radium	C:78% T:86% 1.28 ± 0.665 (1.22)	pCi/L		12/14/20 15:54	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-43D Lab ID: 92505468001 Collected: 11/10/20 10:21 Received: 11/11/20 12:12 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.150 ± 0.247 (0.551) C:76% T:NA	pCi/L	12/01/20 07:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.638 ± 0.432 (0.836) C:78% T:81%	pCi/L	12/03/20 11:11	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.788 ± 0.679 (1.39)	pCi/L	12/17/20 15:41	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: EB-01 Lab ID: 92505468002 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	12/17/20 15:41	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-44D Lab ID: 92505468003 Collected: 11/10/20 15:55 Received: 11/11/20 12:12 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.244 ± 0.219 (0.389) C:95% T:NA	pCi/L	12/01/20 07:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.0487 ± 0.339 (0.777) C:78% T:90%	pCi/L	12/03/20 11:12	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.293 ± 0.558 (1.17)	pCi/L	12/17/20 15:41	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

Sample: HGWA-44D FILTERED **Lab ID: 92505468004** Collected: 11/10/20 16:30 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	0.0162 ± 0.234 (0.615) C:84% T:NA	pCi/L	12/01/20 07:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.0824 ± 0.364 (0.826) C:76% T:81%	pCi/L	12/03/20 11:12	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.0986 ± 0.598 (1.44)	pCi/L	12/17/20 15:41	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-42D Lab ID: 92505468005 Collected: 11/11/20 15:25 Received: 11/12/20 16:47 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0316 ± 0.161 (0.401) C:94% T:NA	pCi/L	12/14/20 08:00	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.25 ± 0.504 (0.814) C:78% T:86%	pCi/L	12/09/20 11:12	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.28 ± 0.665 (1.22)	pCi/L	12/14/20 15:54	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

QC Batch: 425494

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92505468005

METHOD BLANK: 2056122

Matrix: Water

Associated Lab Samples: 92505468005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.240 ± 0.389 (0.846) C:74% T:78%	pCi/L	12/09/20 11:13	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

QC Batch: 426374

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92505468001, 92505468002, 92505468003, 92505468004, 92505468005

METHOD BLANK: 2060743

Matrix: Water

Associated Lab Samples: 92505468001, 92505468002, 92505468003, 92505468004, 92505468005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0337 ± 0.132 (0.329) C:92% T:NA	pCi/L	12/14/20 08:00	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

QC Batch:	426455	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92505468001, 92505468002, 92505468003, 92505468004

METHOD BLANK: 2060998 Matrix: Water

Associated Lab Samples: 92505468001, 92505468002, 92505468003, 92505468004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.623 ± 0.506 (1.00) C:63% T:69%	pCi/L	12/03/20 11:13	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-2 BKG 02 RADS

Pace Project No.: 92505468

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-2 BKG 02 RADS
Pace Project No.: 92505468

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92505468001	HGWA-43D	EPA 9315	426374		
92505468002	EB-01	EPA 9315	426374		
92505468003	HGWA-44D	EPA 9315	426374		
92505468004	HGWA-44D FILTERED	EPA 9315	426374		
92505468005	HGWA-42D	EPA 9315	426374		
92505468001	HGWA-43D	EPA 9320	426455		
92505468002	EB-01	EPA 9320	426455		
92505468003	HGWA-44D	EPA 9320	426455		
92505468004	HGWA-44D FILTERED	EPA 9320	426455		
92505468005	HGWA-42D	EPA 9320	425494		
92505468001	HGWA-43D	Total Radium Calculation	427699		
92505468002	EB-01	Total Radium Calculation	427699		
92505468003	HGWA-44D	Total Radium Calculation	427699		
92505468004	HGWA-44D FILTERED	Total Radium Calculation	427699		
92505468005	HGWA-42D	Total Radium Calculation	427136		

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# : 92505468**

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: IR 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. <u>FB-01 is labeled EB-01</u> <u>11/11/20 @ 1610</u>
-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.

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

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

Project #

WO# : 92505468

PM: KLH1

Due Date: 12/04/20

CLIENT: GA-GA Power

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

Page: 1 of 2

Section A Required Client Information Company: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: _____ Requested Due Date/TAT: 1st Day		Section B Required Project Information Report To: SCS Contacts Copy To: Geosyntec Contacts Purchase Order No.: _____ Project Name: Plant Hammond AP-2 BKG 02 Project Number: GWS681B		Section C Invoice Information Attention: Southern Co. Company Name: _____ Address: _____ P.O. Box: _____ Reference: _____ Project: Kevin Herring Manager: _____ Prod. #/Inv. #: 10839-4	
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 (see _____)			Site Location: _____ STATE: GA		

ITEM #	Section D Required Client Information Valid Matrix Codes MATRIX CODE CODE SAMPLE TYPE (G=GRAB C=COMP) DATE TIME DATE TIME SAMPLE TEMP AT COLLECTION # OF CONTAINERS Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Section E Required Client Information MATRIX CODE CODE SAMPLE TYPE (G=GRAB C=COMP) DATE TIME DATE TIME SAMPLE TEMP AT COLLECTION # OF CONTAINERS Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	COLLECTED		PRESERVED		ANALYSIS TEST				Residual Chlorine (Y/N)	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
			COMPOSITE	DATE	TIME	DATE	TIME	Y	N	Y						N
1	HQWA-42B	WT G	11/10	10:21	12/12	14:37	5	2	3	3						
2	HQWA-43D	WT G	11/10	10:21	12/12	14:37	5	2	3							
3	HQWA-44B	WT G	11/10	10:21	12/12	14:37	5	2	3							
4	FB-01	WT G	11/10	10:21	12/12	14:37	5	2	3							
5																
6																
7																
8																
9																
10																
11																
12																

Additional Comments: _____

Relinquished By / Affiliation: *Shawn Haddock / Geosyntec* DATE: 11/11 TIME: 12:12

Accepted By / Affiliation: *Kevin Herring / Southern Co.* DATE: 11/14 TIME: 14:37

Sampler Name and Signature: *Shawn Haddock*

Print Name of Sampler: Shawn Haddock DATE Signed (MM/DD/YY): 11/10/20

Signature of Sampler: *Shawn Haddock*

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

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

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information Company: GA Power Address: Atlanta, GA	Section B Required Project Information Report To: SCS Contacts Copy To: Geosynthetic Contacts	Section C Inlet Information Attention: Southern Co. Company Name: Address: Project Name: Plant: Hammond AP-2 BKG 02 Reference: Kevin Herring Project Manager Project Profile #: 10839-4
Requested Due Date/TIME: To Day	Requested Analysis Filtered (Y/N)	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 <input type="checkbox"/>
Site Location: GA STATE: GA	Requested Analysis Filtered (Y/N)	Temp in °C: _____ Received on Ice (Y/N): _____ Custody Sealed Cooler (Y/N): _____ Samples Intact (Y/N): _____

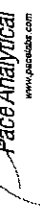
ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Valid Matrix Codes MATRIX CODE DW WW SL SLC SLC SLC SLC SLC SLC SLC SLC	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
											H ₂ SO ₄	HNO ₃			
1	HQWA-42D		WT G							6			X		
2	HQWA-43D		WT G							5			X		
3	HQWA-44D		WT G	11/10/2020	5:55					5			X		
4	HQWA-45D		WT G	11/10/2020	16:30					5			X		
5	HQWA-46D		WT G	11/10/2020	16:30					2			X		
6										2			X		
7										3			X		
8										3			X		
9										3			X		
10										3			X		
11										3			X		
12										3			X		

Additional Comments:
 Relinquished by: Affiliation
 Date: 11/10/2020
 Time: 17:35
 Accepted by: Affiliation
 Date: 11/10/2020
 Time: 17:42

Signature of Sampler: Shawn Lynn
 Signature of Client: Kevin Herring
 Date Signed: 11/10/2020
 Date Signed: 11/10/2020

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

Quality Control Sample Performance Assessment



Analyt must manually enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: JJY
Date: 12/11/2020
Worklist: 57777
Matrix: DW

Method Blank Assessment	
MB Sample ID	2060743
MB Concentration:	0.034
MB Counting Uncertainty:	0.131
MB MDC:	0.329
MB Numerical Performance Indicator:	0.50
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	Y
LCS57777	12/14/2020
LCSB57777	12/14/2020
Count Date:	19-033
Spike I.D.:	24.042
Decay Corrected Spike Concentration (pCi/mL):	0.10
Volume Used (mL):	0.521
Aliquot Volume (L, g, F):	4.616
Target Conc. (pCi/L, g, F):	0.056
Uncertainty (Calculated):	4.983
Result (pCi/L, g, F):	0.652
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.91
Numerical Performance Indicator:	-1.97
Percent Recovery:	106.51%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS57777
Duplicate Sample I.D.:	LCS57777
Sample Result (pCi/L, g, F):	4.983
Sample Duplicate Result (pCi/L, g, F):	0.652
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.027
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.584
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	2.139
Duplicate Percent Recoveries:	19.90%
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 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 Target Conc. (pCi/L, g, F):		
Spike Volume Used in MSD (mL):	MSD Aliquot (L, g, F):		
MS Aliquot (L, g, F):	MSD Target Conc. (pCi/L, g, F):		
MS Target Conc. (pCi/L, g, F):	MS Spike Uncertainty (calculated):		
MSD Aliquot (L, g, F):	MSD Spike Uncertainty (calculated):		
MSD Target Conc. (pCi/L, g, F):	Sample Result:		
MS Spike Uncertainty (calculated):	Sample Result Counting Uncertainty (pCi/L, g, F):		
MSD Spike Uncertainty (calculated):	Sample Matrix Spike Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
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):		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	MS Numerical Performance Indicator:		
MS Numerical Performance Indicator:	MS Percent Recovery:		
MSD Numerical Performance Indicator:	MSD Percent Recovery:		
MS Status vs Numerical Indicator:	MS 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 Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Result:
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:	Duplicate Percent Recoveries:
Duplicate Status vs Numerical Indicator:	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:

VAM 12/15/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 12/7/2020
Worklist: 57700
Matrix: WT

Method Blank Assessment	
MB Sample ID	2056122
MB concentration:	0.240
M/B 2 Sigma CSU:	0.389
MB MDC:	0.846
MB Numerical Performance Indicator:	1.21
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSID (Y or N)?	Y
Count Date:	12/9/2020	LCS57700	
Spike I.D.:	20-030	12/9/2020	
Decay Corrected Spike Concentration (pCi/mL):	37.334	37.334	
Volume Used (mL):	0.10	0.10	
Aliquot Volume (L, g, F):	0.817	0.817	
Target Conc. (pCi/L, g, F):	4.520	4.572	
Uncertainty (Calculated):	0.222	0.224	
Result (pCi/L, g, F):	3.467	2.970	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.898	0.771	
Numerical Performance Indicator:	-2.23	-3.91	
Percent Recovery:	76.70%	64.94%	
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		Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	LCS57700	Sample I.D.:	MS/MSD 1
Duplicate Sample I.D.:	LCS57700	Sample MS I.D.:	MS/MSD 2
Sample Result (pCi/L, g, F):	3.467	Sample MSD I.D.:	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.898	Sample Matrix Spike Result:	
Sample Duplicate Result (pCi/L, g, F):	2.970	Sample Matrix Spike Duplicate Result:	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.771	Sample Matrix Spike Duplicate Result:	
Are sample and/or duplicate results below RL?	NO	Duplicate Numerical Performance Indicator:	
Duplicate Numerical Performance Indicator:	0.824	(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	
Duplicate Status vs Numerical Indicator:	Pass	MS/MSD Duplicate Status vs Numerical Indicator:	
Duplicate Status vs RPD:	Pass	MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	36%	% 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: 12/10/20

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	
Spike I.D.:	20-030	12/3/2020	
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 23, 2020

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511971

Dear Kelley Sharpe:

Enclosed are the analytical results for sample(s) received by the laboratory on December 15, 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 - Peachtree Corners, GA

This replaces the December 21, 2020 final report. This report was revised to report Boron by EPA 6020B. No other changes were made to this report.

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

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Ben Hodges, Georgia Power
Warren Johnson, ARCADIS - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511971

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511971

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92511971001	AP-2 UP	Water	12/14/20 16:45	12/15/20 15:19
92511971002	AP-2 MID	Water	12/14/20 16:15	12/15/20 15:19
92511971003	AP-2 DOWN	Water	12/14/20 16:05	12/15/20 15:19

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SAMPLE ANALYTE COUNT

Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511971

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92511971001	AP-2 UP	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92511971002	AP-2 MID	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92511971003	AP-2 DOWN	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511971

Sample: AP-2 UP		Lab ID: 92511971001	Collected: 12/14/20 16:45	Received: 12/15/20 15:19	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA						
Potassium	2.7	mg/L	0.20	1	12/17/20 09:44	12/19/20 00:04	7440-09-7	
Sodium	1.4	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:04	7440-23-5	
Calcium	26.2	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:04	7440-70-2	
Magnesium	3.5	mg/L	0.050	1	12/17/20 09:44	12/19/20 00:04	7439-95-4	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA						
Boron	ND	mg/L	0.040	1	12/16/20 12:36	12/17/20 17:34	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	12/16/20 12:36	12/17/20 17:34	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	12/16/20 12:36	12/17/20 17:34	7439-98-7	
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA						
Total Dissolved Solids	153	mg/L	10.0	1		12/19/20 13:48		
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville						
Alkalinity, Bicarbonate (CaCO ₃)	74.5	mg/L	5.0	1		12/18/20 19:33		
Alkalinity, Total as CaCO ₃	74.5	mg/L	5.0	1		12/18/20 19:33		
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	1		12/18/20 23:25	16887-00-6	
Fluoride	ND	mg/L	0.10	1		12/18/20 23:25	16984-48-8	
Sulfate	12.2	mg/L	1.0	1		12/18/20 23:25	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511971

Sample: AP-2 MID	Lab ID: 92511971002	Collected: 12/14/20 16:15	Received: 12/15/20 15:19	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	3.4	mg/L	0.20	1	12/17/20 09:44	12/19/20 00:09	7440-09-7	
Sodium	1.4	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:09	7440-23-5	
Calcium	28.4	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:09	7440-70-2	
Magnesium	3.9	mg/L	0.050	1	12/17/20 09:44	12/19/20 00:09	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Boron	0.072	mg/L	0.040	1	12/16/20 12:36	12/17/20 17:40	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	12/16/20 12:36	12/17/20 17:40	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	12/16/20 12:36	12/17/20 17:40	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	166	mg/L	10.0	1		12/19/20 13:48		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	69.9	mg/L	5.0	1		12/18/20 19:41		
Alkalinity, Total as CaCO ₃	69.9	mg/L	5.0	1		12/18/20 19:41		
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	1		12/19/20 00:10	16887-00-6	
Fluoride	0.11	mg/L	0.10	1		12/19/20 00:10	16984-48-8	
Sulfate	23.9	mg/L	1.0	1		12/19/20 00:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511971

Sample: AP-2 DOWN	Lab ID: 92511971003	Collected: 12/14/20 16:05	Received: 12/15/20 15:19	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	3.4	mg/L	0.20	1	12/17/20 09:44	12/19/20 00:14	7440-09-7	
Sodium	1.3	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:14	7440-23-5	
Calcium	25.8	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:14	7440-70-2	
Magnesium	3.6	mg/L	0.050	1	12/17/20 09:44	12/19/20 00:14	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Boron	0.061	mg/L	0.040	1	12/16/20 12:36	12/17/20 17:46	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	12/16/20 12:36	12/17/20 17:46	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	12/16/20 12:36	12/17/20 17:46	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	162	mg/L	10.0	1		12/19/20 13:48		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	62.2	mg/L	5.0	1		12/18/20 19:49		
Alkalinity, Total as CaCO ₃	62.2	mg/L	5.0	1		12/18/20 19:49		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	2.5	mg/L	1.0	1		12/19/20 00:25	16887-00-6	
Fluoride	0.11	mg/L	0.10	1		12/19/20 00:25	16984-48-8	
Sulfate	21.9	mg/L	1.0	1		12/19/20 00:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511971

QC Batch:	587738	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D ATL
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92511971001, 92511971002, 92511971003

METHOD BLANK: 3105916 Matrix: Water

Associated Lab Samples: 92511971001, 92511971002, 92511971003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	12/18/20 23:09	
Magnesium	mg/L	ND	0.050	12/18/20 23:09	
Potassium	mg/L	ND	0.20	12/18/20 23:09	
Sodium	mg/L	ND	1.0	12/18/20 23:09	

LABORATORY CONTROL SAMPLE: 3105917

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	100	80-120	
Magnesium	mg/L	1	1.0	104	80-120	
Potassium	mg/L	1	1.0	104	80-120	
Sodium	mg/L	1	1.1	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3105918 3105919

Parameter	Units	92511758011 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result					
Calcium	mg/L	ND	1	1	1.6	1.5	114	108	75-125	4	20
Magnesium	mg/L	ND	1	1	1.1	1.0	105	102	75-125	3	20
Potassium	mg/L	ND	1	1	1.0	1.0	104	100	75-125	4	20
Sodium	mg/L	ND	1	1	1.1	1.0	110	105	75-125	5	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511971

QC Batch: 587446 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92511971001, 92511971002, 92511971003

METHOD BLANK: 3104529 Matrix: Water
Associated Lab Samples: 92511971001, 92511971002, 92511971003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	12/17/20 17:22	
Cobalt	mg/L	ND	0.0050	12/17/20 17:22	
Molybdenum	mg/L	ND	0.010	12/17/20 17:22	

LABORATORY CONTROL SAMPLE: 3104530

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.85	85	80-120	
Cobalt	mg/L	0.1	0.090	90	80-120	
Molybdenum	mg/L	0.1	0.095	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3104531 3104532

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92511973001 Result	Spike Conc.	Spike Conc.	Conc.								
Boron	mg/L	0.041	1	1	0.94	0.93	90	89	75-125	0	20		
Cobalt	mg/L	ND	0.1	0.1	0.096	0.095	96	94	75-125	2	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.11	104	105	75-125	1	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511971

QC Batch:	587365	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: 92511971001, 92511971002, 92511971003

METHOD BLANK: 3104189 Matrix: Water

Associated Lab Samples: 92511971001, 92511971002, 92511971003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	12/19/20 13:47	

LABORATORY CONTROL SAMPLE: 3104190

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

SAMPLE DUPLICATE: 3104191

Parameter	Units	92511963001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	71.0	81.0	13	10	D6

SAMPLE DUPLICATE: 3104192

Parameter	Units	92511973004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	69.0	73.0	6	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511971

QC Batch: 588167 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92511971001, 92511971002, 92511971003

METHOD BLANK: 3107984 Matrix: Water
Associated Lab Samples: 92511971001, 92511971002, 92511971003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	12/18/20 18:47	
Alkalinity, Bicarbonate (CaCO ₃)	mg/L	ND	5.0	12/18/20 18:47	

LABORATORY CONTROL SAMPLE: 3107985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	51.5	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3107986 3107987

Parameter	Units	92511312001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	264	50	50	318	318	109	108	80-120	0	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3107988 3107989

Parameter	Units	92511978003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	24.9	50	50	74.5	70.3	99	91	80-120	6	25	

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511971

QC Batch: 587786 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: 92511971001, 92511971002, 92511971003

METHOD BLANK: 3106200 Matrix: Water
 Associated Lab Samples: 92511971001, 92511971002, 92511971003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/18/20 21:42	
Fluoride	mg/L	ND	0.10	12/18/20 21:42	
Sulfate	mg/L	ND	1.0	12/18/20 21:42	

LABORATORY CONTROL SAMPLE: 3106201

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.4	103	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	52.0	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3106202 3106203

Parameter	Units	92511971001		3106202		3106203		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MS Result	MS Spike Conc.				
Chloride	mg/L	5.3	50	50	56.1	57.6	102	105	90-110	2	10
Fluoride	mg/L	ND	2.5	2.5	2.7	2.8	106	110	90-110	3	10
Sulfate	mg/L	12.2	50	50	66.9	68.4	109	112	90-110	2	10 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3106204 3106205

Parameter	Units	92511978002		3106204		3106205		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MS Result	MS Spike Conc.				
Chloride	mg/L	1.4	50	50	56.1	55.5	109	108	90-110	1	10
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	104	106	90-110	1	10
Sulfate	mg/L	10.2	50	50	63.8	64.2	107	108	90-110	1	10

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511971

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511971

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92511971001	AP-2 UP	EPA 3010A	587738	EPA 6010D	587869
92511971002	AP-2 MID	EPA 3010A	587738	EPA 6010D	587869
92511971003	AP-2 DOWN	EPA 3010A	587738	EPA 6010D	587869
92511971001	AP-2 UP	EPA 3005A	587446	EPA 6020B	587533
92511971002	AP-2 MID	EPA 3005A	587446	EPA 6020B	587533
92511971003	AP-2 DOWN	EPA 3005A	587446	EPA 6020B	587533
92511971001	AP-2 UP	SM 2450C-2011	587365		
92511971002	AP-2 MID	SM 2450C-2011	587365		
92511971003	AP-2 DOWN	SM 2450C-2011	587365		
92511971001	AP-2 UP	SM 2320B-2011	588167		
92511971002	AP-2 MID	SM 2320B-2011	588167		
92511971003	AP-2 DOWN	SM 2320B-2011	588167		
92511971001	AP-2 UP	EPA 300.0 Rev 2.1 1993	587786		
92511971002	AP-2 MID	EPA 300.0 Rev 2.1 1993	587786		
92511971003	AP-2 DOWN	EPA 300.0 Rev 2.1 1993	587786		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A	Section B	Section C	Section D
Required Client Information: Company: ARCADIS - Atlanta Address: 2839 Paces Ferry Rd Atlanta, GA 30339 Email: wamrn.johnson@arcadis.com Phone: 678.485.5298 Requested Due Date: 7 Day TAT	Required Project Information: Report To: Ben Hodges, GPC Copy To: Purchase Order #: SCS10392775 Project Name: Plant Hammond AP-2 Project #:	Invoice Information: Attention: Ben Hodges Company Name: GPC Address: Pace Quote: Pace Project Manager: Mayia.Parks@pacestabs.com Pace Profile #: 2239	Page: 1 Of 1 Regulatory Agency: State / Location: GA

#	ITEMS	MATRIX	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N				Residual Chlorine (Y/N)
				START	END		DATE	TIME										DATE	TIME	DATE	TIME	
				DATE	TIME		DATE	TIME										DATE	TIME	DATE	TIME	
1	AP-2 UP	DW WT	WT	12/14	16:45									X	X	X	X	X	X	X	X	
2	AP-2 MID	WW P	WT	12/14	16:15									X	X	X	X	X	X	X	X	
3	AP-2 DOWN	SL OL WP	WT	12/14	16:05									X	X	X	X	X	X	X	X	
4		Oil																				
5		Other																				
6		Air																				
7		OT																				
8		TS																				
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLER CONDITIONS	
	PRINT Name of SAMPLER	SIGNATURE of SAMPLER	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	CLUSTDY	SEALD	COOLER	SAMPLES
	<i>[Signature]</i>	<i>[Signature]</i>	12/15/20	12:05	12/15/20	12:56	<i>[Signature]</i>	<i>[Signature]</i>	12/15/20	12:56				
	<i>[Signature]</i>	<i>[Signature]</i>	12/15/20	15:19	12/15/20	19:19	<i>[Signature]</i>	<i>[Signature]</i>	12/15/20	19:19				

WO# : 92511971

Major ions: Mg, Na, K, Total alkalinity, Bicarbonate alkalinity

Temp in C: 12.15-20
 DATE Signed: 12.15.20

SAMPLER NAME AND SIGNATURE:
 PRINT Name of SAMPLER: *Chad Teachingson*
 SIGNATURE of SAMPLER: *[Signature]*

Page 15 of 60

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: Arcadis

Project #:

WO#: 92511971
 PM: MP Due Date: 12/22/20
 CLIENT: GA-ArcadAtJ

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

Custody Seal Present? Yes No Seals Intact? Yes No

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer: IR Gun ID: 0.87 230 Type of Ice: Wet Blue None

Biological Tissue Frozen?

Yes No N/A

Cooler Temp: 0.8 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): 0.8

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. <u>plf rec 024</u>
Short Hold Time Analysis (<72 hr.)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Includes Date/Time/ID/Analysis Matrix: <u>W</u>	9.
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____

December 23, 2020

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511973

Dear Kelley Sharpe:

Enclosed are the analytical results for sample(s) received by the laboratory on December 15, 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 - Peachtree Corners, GA

This replaces the December 21, 2020 final report. This report was revised to report Boron and Cobalt by EPA 6020B. No other changes were made to this report.

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

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Ben Hodges, Georgia Power
Warren Johnson, ARCADIS - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511973

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511973

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92511973001	H+0.75	Water	12/14/20 14:00	12/15/20 15:19
92511973002	H+0.25	Water	12/14/20 14:20	12/15/20 15:19
92511973003	H-0.5	Water	12/14/20 14:30	12/15/20 15:19
92511973004	H-2	Water	12/14/20 15:30	12/15/20 15:19

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SAMPLE ANALYTE COUNT

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511973

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92511973001	H+0.75	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92511973002	H+0.25	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92511973003	H-0.5	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92511973004	H-2	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	3	PASI-GA
		SM 2450C-2011	ALW	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-CCR Ash Pond-Revised Report
 Pace Project No.: 92511973

Sample: H+0.75		Lab ID: 92511973001		Collected: 12/14/20 14:00	Received: 12/15/20 15:19	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.0	mg/L	0.20	1	12/17/20 09:44	12/19/20 00:20	7440-09-7	
Sodium	4.6	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:20	7440-23-5	
Calcium	9.9	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:20	7440-70-2	
Magnesium	2.5	mg/L	0.050	1	12/17/20 09:44	12/19/20 00:20	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Boron	0.041	mg/L	0.040	1	12/16/20 12:36	12/17/20 17:51	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	12/16/20 12:36	12/17/20 17:51	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	12/16/20 12:36	12/17/20 17:51	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	72.0	mg/L	10.0	1		12/19/20 13:48		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	32.8	mg/L	5.0	1		12/18/20 19:57		
Alkalinity, Total as CaCO ₃	32.8	mg/L	5.0	1		12/18/20 19:57		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	5.8	mg/L	1.0	1		12/19/20 00:40	16887-00-6	
Fluoride	ND	mg/L	0.10	1		12/19/20 00:40	16984-48-8	
Sulfate	6.8	mg/L	1.0	1		12/19/20 00:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-CCR Ash Pond-Revised Report
 Pace Project No.: 92511973

Sample: H+0.25	Lab ID: 92511973002	Collected: 12/14/20 14:20	Received: 12/15/20 15:19	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.1	mg/L	0.20	1	12/17/20 09:44	12/19/20 00:35	7440-09-7	
Sodium	3.9	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:35	7440-23-5	
Calcium	9.8	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:35	7440-70-2	
Magnesium	2.6	mg/L	0.050	1	12/17/20 09:44	12/19/20 00:35	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Boron	0.048	mg/L	0.040	1	12/16/20 12:36	12/17/20 18:14	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	12/16/20 12:36	12/17/20 18:14	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	12/16/20 12:36	12/17/20 18:14	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	65.0	mg/L	10.0	1		12/19/20 13:48		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	31.8	mg/L	5.0	1		12/18/20 20:03		
Alkalinity, Total as CaCO ₃	31.8	mg/L	5.0	1		12/18/20 20:03		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	6.1	mg/L	1.0	1		12/19/20 00:55	16887-00-6	
Fluoride	ND	mg/L	0.10	1		12/19/20 00:55	16984-48-8	
Sulfate	4.6	mg/L	1.0	1		12/19/20 00:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511973

Sample: H-0.5	Lab ID: 92511973003	Collected: 12/14/20 14:30	Received: 12/15/20 15:19	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.1	mg/L	0.20	1	12/17/20 09:44	12/19/20 00:40	7440-09-7	
Sodium	3.5	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:40	7440-23-5	
Calcium	9.8	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:40	7440-70-2	
Magnesium	2.5	mg/L	0.050	1	12/17/20 09:44	12/19/20 00:40	7439-95-4	
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Boron	0.041	mg/L	0.040	1	12/16/20 12:36	12/22/20 15:32	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	12/16/20 12:36	12/17/20 18:31	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	12/16/20 12:36	12/17/20 18:31	7439-98-7	
2540C Total Dissolved Solids								
Analytical Method: SM 2450C-2011								
Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	69.0	mg/L	10.0	1		12/19/20 13:48		
2320B Alkalinity								
Analytical Method: SM 2320B-2011								
Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	33.1	mg/L	5.0	1		12/18/20 20:10		
Alkalinity, Total as CaCO ₃	33.1	mg/L	5.0	1		12/18/20 20:10		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0 Rev 2.1 1993								
Pace Analytical Services - Asheville								
Chloride	5.7	mg/L	1.0	1		12/19/20 01:10	16887-00-6	
Fluoride	ND	mg/L	0.10	1		12/19/20 01:10	16984-48-8	
Sulfate	4.6	mg/L	1.0	1		12/19/20 01:10	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511973

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: H-2								
Lab ID: 92511973004								
Collected: 12/14/20 15:30 Received: 12/15/20 15:19 Matrix: Water								
6010D ATL ICP Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Potassium	2.0	mg/L	0.20	1	12/17/20 09:44	12/19/20 00:45	7440-09-7	
Sodium	3.5	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:45	7440-23-5	
Calcium	10.7	mg/L	1.0	1	12/17/20 09:44	12/19/20 00:45	7440-70-2	
Magnesium	2.7	mg/L	0.050	1	12/17/20 09:44	12/19/20 00:45	7439-95-4	
6020 MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Boron	0.040	mg/L	0.040	1	12/16/20 12:36	12/22/20 15:38	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	12/16/20 12:36	12/17/20 18:37	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	12/16/20 12:36	12/17/20 18:37	7439-98-7	
2540C Total Dissolved Solids Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	69.0	mg/L	10.0	1		12/19/20 13:48		
2320B Alkalinity Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	34.6	mg/L	5.0	1		12/18/20 20:16		
Alkalinity, Total as CaCO ₃	34.6	mg/L	5.0	1		12/18/20 20:16		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	5.6	mg/L	1.0	1		12/19/20 01:24	16887-00-6	
Fluoride	ND	mg/L	0.10	1		12/19/20 01:24	16984-48-8	
Sulfate	4.5	mg/L	1.0	1		12/19/20 01:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511973

QC Batch: 587738 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92511973001, 92511973002, 92511973003, 92511973004

METHOD BLANK: 3105916 Matrix: Water
Associated Lab Samples: 92511973001, 92511973002, 92511973003, 92511973004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	12/18/20 23:09	
Magnesium	mg/L	ND	0.050	12/18/20 23:09	
Potassium	mg/L	ND	0.20	12/18/20 23:09	
Sodium	mg/L	ND	1.0	12/18/20 23:09	

LABORATORY CONTROL SAMPLE: 3105917

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	100	80-120	
Magnesium	mg/L	1	1.0	104	80-120	
Potassium	mg/L	1	1.0	104	80-120	
Sodium	mg/L	1	1.1	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3105918 3105919

Parameter	Units	92511758011 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result					
Calcium	mg/L	ND	1	1	1.6	1.5	114	108	75-125	4	20
Magnesium	mg/L	ND	1	1	1.1	1.0	105	102	75-125	3	20
Potassium	mg/L	ND	1	1	1.0	1.0	104	100	75-125	4	20
Sodium	mg/L	ND	1	1	1.1	1.0	110	105	75-125	5	20

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report
Pace Project No.: 92511973

QC Batch: 587446 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92511973001, 92511973002, 92511973003, 92511973004

METHOD BLANK: 3104529 Matrix: Water
Associated Lab Samples: 92511973001, 92511973002, 92511973003, 92511973004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	12/17/20 17:22	
Cobalt	mg/L	ND	0.0050	12/17/20 17:22	
Molybdenum	mg/L	ND	0.010	12/17/20 17:22	

LABORATORY CONTROL SAMPLE: 3104530

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.85	85	80-120	
Cobalt	mg/L	0.1	0.090	90	80-120	
Molybdenum	mg/L	0.1	0.095	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3104531 3104532

Parameter	Units	92511973001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.041	1	1	0.94	0.93	90	89	75-125	0	20	
Cobalt	mg/L	ND	0.1	0.1	0.096	0.095	96	94	75-125	2	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.11	104	105	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511973

QC Batch: 587365 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: 92511973001, 92511973002, 92511973003, 92511973004

METHOD BLANK: 3104189 Matrix: Water
 Associated Lab Samples: 92511973001, 92511973002, 92511973003, 92511973004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	12/19/20 13:47	

LABORATORY CONTROL SAMPLE: 3104190

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

SAMPLE DUPLICATE: 3104191

Parameter	Units	92511963001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	71.0	81.0	13	10	D6

SAMPLE DUPLICATE: 3104192

Parameter	Units	92511973004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	69.0	73.0	6	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511973

QC Batch: 588167 Analysis Method: SM 2320B-2011
 QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92511973001, 92511973002, 92511973003, 92511973004

METHOD BLANK: 3107984 Matrix: Water
 Associated Lab Samples: 92511973001, 92511973002, 92511973003, 92511973004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	12/18/20 18:47	
Alkalinity, Bicarbonate (CaCO ₃)	mg/L	ND	5.0	12/18/20 18:47	

LABORATORY CONTROL SAMPLE: 3107985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	51.5	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3107986 3107987

Parameter	Units	92511312001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	264	50	50	318	318	109	108	80-120	0	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3107988 3107989

Parameter	Units	92511978003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	24.9	50	50	74.5	70.3	99	91	80-120	6	25	

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QUALITY CONTROL DATA

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511973

QC Batch: 587786 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: 92511973001, 92511973002, 92511973003, 92511973004

METHOD BLANK: 3106200 Matrix: Water
 Associated Lab Samples: 92511973001, 92511973002, 92511973003, 92511973004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/18/20 21:42	
Fluoride	mg/L	ND	0.10	12/18/20 21:42	
Sulfate	mg/L	ND	1.0	12/18/20 21:42	

LABORATORY CONTROL SAMPLE: 3106201

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.4	103	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	52.0	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3106202 3106203

Parameter	Units	92511971001		MS		MSD		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result								
Chloride	mg/L	5.3	50	50	56.1	57.6	102	105	90-110	2	10				
Fluoride	mg/L	ND	2.5	2.5	2.7	2.8	106	110	90-110	3	10				
Sulfate	mg/L	12.2	50	50	66.9	68.4	109	112	90-110	2	10	M1			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3106204 3106205

Parameter	Units	92511978002		MS		MSD		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result								
Chloride	mg/L	1.4	50	50	56.1	55.5	109	108	90-110	1	10				
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	104	106	90-110	1	10				
Sulfate	mg/L	10.2	50	50	63.8	64.2	107	108	90-110	1	10				

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QUALIFIERS

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511973

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond-CCR Ash Pond-Revised Report

Pace Project No.: 92511973

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92511973001	H+0.75	EPA 3010A	587738	EPA 6010D	587869
92511973002	H+0.25	EPA 3010A	587738	EPA 6010D	587869
92511973003	H-0.5	EPA 3010A	587738	EPA 6010D	587869
92511973004	H-2	EPA 3010A	587738	EPA 6010D	587869
92511973001	H+0.75	EPA 3005A	587446	EPA 6020B	587533
92511973002	H+0.25	EPA 3005A	587446	EPA 6020B	587533
92511973003	H-0.5	EPA 3005A	587446	EPA 6020B	587533
92511973004	H-2	EPA 3005A	587446	EPA 6020B	587533
92511973001	H+0.75	SM 2450C-2011	587365		
92511973002	H+0.25	SM 2450C-2011	587365		
92511973003	H-0.5	SM 2450C-2011	587365		
92511973004	H-2	SM 2450C-2011	587365		
92511973001	H+0.75	SM 2320B-2011	588167		
92511973002	H+0.25	SM 2320B-2011	588167		
92511973003	H-0.5	SM 2320B-2011	588167		
92511973004	H-2	SM 2320B-2011	588167		
92511973001	H+0.75	EPA 300.0 Rev 2.1 1993	587786		
92511973002	H+0.25	EPA 300.0 Rev 2.1 1993	587786		
92511973003	H-0.5	EPA 300.0 Rev 2.1 1993	587786		
92511973004	H-2	EPA 300.0 Rev 2.1 1993	587786		

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

Section A Required Client Information: **Section B** Required Project Information: **Section C** Invoice Information:

Company:	ARCADIS - Atlanta	Report to:	Ben Hodges, GPC	Attention:	Ben Hodges
Address:	2839 Paces Ferry Rd Atlanta, GA 30339	Copy To:		Company Name:	GPC
Email:	warren.johnson@arcadis.com	Purchase Order #:	SCS10382775	Quote:	
Phone:	678.485.5298	Project Name:	Plant Hammond Coosa River	Pace Project Manager:	Mayla Parks@paceilabs.com
Requested Due Date:	7 Day TAT	Project #:		Pace Profile #:	2239
			Regulatory Agency GA		

ITEM #	MATRIX	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analyses Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
					START	END						
					DATE	TIME						
1	H+0.75	WT	WT	WT	12-14	14:00						
2	H+0.25	WT	WT	WT	12-14	14:20						
3	H+0.5	WT	WT	WT	12-14	14:30						
4	H+2	WT	WT	WT	12-14	15:30						
5												
6												
7												
8												
9												
10												
11												
12												

W0# : 92511973
92511973

Major Ions: Mg, Na, K, Total Alkalinity, Bicarbonate Alkalinity	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	<i>Ben Hodges</i>	11/15/36	12:05	<i>Ben Hodges</i>	11/15/36	12:50	Received on Ice (Y/N) Custody Sealed Cooler (Y/N) Samples Intact (Y/N)
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <i>Ben Hodges</i> SIGNATURE of SAMPLER: <i>Ben Hodges</i> DATE signed: <i>11-15-36</i>							

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: Arcadis

Project #:

WO# : 92511973
 PN: MP Due Date: 12/22/20
 CLIENT: GA-ArcadAtI

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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 12/15/20
CSH

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: IR Gun ID: 0.87 230 Type of Ice: Wet Blue None

Cooler Temp: 0.8 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): 0.8

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.	<u>PH rec 004</u>
Short Hold Time Analysis (<72 hr.)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix:	<u>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: _____

Validation Reports

Memorandum

Date: August 4, 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validation - Level II Data Deliverable – Pace Analytical Services, LLC Project Number 2628190**

SITE: Plant Hammond AP-2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of one aqueous sample, one equipment blank and one field blank collected 22 January 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
- 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 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 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 report:

Laboratory ID	Client ID
2628190001	MW-33
2628190002	EB-01

Laboratory ID	Client ID
2628190003	FB-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 times. The samples were logged in with the collection year 2020. There was a time discrepancy for the second sample transfer. The relinquished by time was documented as 01/23/20 1212 and the received by time was documented as 01/23/20 1215.

The field pH data was not validated.

1.0 METALS

The samples were analyzed for calcium by USEPA methods 3010A/6010D and boron and cobalt by USEPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in this data package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 42376 and 42642). 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. The metals were not detected in the equipment blank above the MDL, with the following exception.

Boron was detected in EB-01 at an estimated concentration greater than the MDL and less than the RL. Since the boron concentration in EB-01 was U qualified due to field blank contamination, no qualifications were applied to the data.

1.7 Field Blank

One field blank was collected with the sample set, FB-01. The metals were not detected in the equipment blank above the MDL, with the following exception.

Boron was detected in FB-01 at an estimated concentration greater than the MDL and less than the RL. Therefore, the estimated boron concentration in the associated sample was U qualified as not detected at the RL.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
EB-01	Boron	0.045	J	0.10	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

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 WET CHEMISTRY

The samples were analyzed for TDS by Standard Method 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 package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset 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 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 the anions (batch 521472). The anions were not detected in the method blank 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). 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.

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 for TDS and one LCS was reported for the anions. 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-01. The wet chemistry parameters were not detected in the equipment blank above the MDL, with the following exception.

2.8 Field Blank

One field blank was collected with the sample set, FB-01. The wet chemistry parameters were not detected in the field blank above the MDL, with the following exception.

TDS (17.0 mg/L) was detected in FB-01 at a concentration greater than the RL. Since TDS was either not detected or detected at a concentration greater than ten times the field blank concentration, no qualifications were applied to the data.

2.9 Field Duplicate

A field duplicate was not collected with the sample set.

2.10 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

2.11 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: August 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 2629701 and 30353288**

SITE: Plant Hammond AP-2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of fourteen aqueous samples, one field duplicate sample and one field blank, collected 2-3 March 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:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B
- Mercury by USEPA Method 7470A

The samples were analyzed at Pace Analytical Services Asheville, North Carolina, for the following analytical test:

- Fluoride 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. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001); and
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2629701001	HGWA-4
2629701002	HGWA-5
2629701003	HGWA-6
2629701004	MW-23D
2629701005	MW-22
2629701006	HGWA-1
2629701007	HGWA-2
2629701008	HGWA-3

Laboratory ID	Client ID
2629701009	HGWC-16
2629701010	HGWC-17
2629701011	FB-02
2629701012	HGWC-14
2629701013	HGWC-15
2629701014	HGWC-18
2629701015	MW-21D
2629701016	FD-01

The samples in laboratory report 2629701 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:

- 2629701: 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.
- 2629701: The relinquished by signatures, dates and times were not documented for the third sample transfers on the pages 1-4 of the COC.
- 2629701: The received by signature, date and time were not documented for the third sample transfer on page 5 of the COC.
- 2629701: The received by signature, date and time were not documented for the fourth sample transfer on page 6 of the COC.

- 30353288: The relinquished by signature, date and time were not documented on page 1 of the COC.
- 30353288: The signatures, dates and times for the sample transfers for pages 3-4 of the COC were documented on separate pages.

The field pH data included with laboratory report 2629701 were not validated.

1.0 METALS

The samples were analyzed for metals by USEPA methods 3005A/6020B (Mercury evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ⊗ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 44279 and 44398). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

Antimony was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) in the method blank in batch 44279. Since antimony was not detected in the associated samples, 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 batch MS/MSD pairs were reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

1.6 Equipment Blank

An equipment blank was not collected with the sample set.

1.7 Field Blank

One field blank was collected with the sample set, FB-02. 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-01. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample, HGWC-18, with the following exception.

The difference between the chromium concentrations in the field duplicate pair was greater than the RL. Therefore, the chromium concentrations in the field duplicate pair were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Reporting Limit	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
HGWC-18	Chromium	0.00040	J	0.010	0.00040	J	7
FD-01	Chromium	0.037	NA		0.037	J	7

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

NA-not applicable

* Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

1.9 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 these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of

the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 44210, 44366 and 44498). 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). One sample set specific MS/MSD pair was reported using sample HGWC-18. The recovery and RPD results were within the laboratory specified acceptance criteria.

Two batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

2.6 Equipment Blank

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-01. Acceptable precision (RPD $\leq 20\%$ or the difference between the concentrations $< RL$) was demonstrated between the field duplicate and the original sample, HGWC-18.

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 FLUORIDE

The samples were analyzed for fluoride 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
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

3.1 Overall Assessment

The fluoride data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

3.2 Holding Times

The holding time for the fluoride analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 528851, 529130, 529175 and 529391). Fluoride was not detected in the method blanks above the MDL.

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Eight 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.

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

3.6 Equipment Blank

An equipment blank was not collected with the sample set.

3.7 Field Blank

One field blank was collected with the sample set, FB-02. Fluoride was not detected in the field blank above the MDL.

3.8 Field Duplicate

One field duplicate sample was collected with the sample set, FD-01. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample, HGWC-18.

3.9 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

3.10 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.

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 these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported for the radium-228 data (batches 387209 and 387208). Two method blanks were reported for the radium-226 data (batches 387206 and 387205). Radium-228 was not detected in the method blanks above the minimum detectable concentrations (MDCs).

Radium-226 was detected above the MDCs in the method blanks in batches 387206 (0.672 pCi/L) and 387205 (605 pCi/L). Therefore, the radium-226 concentrations in the associated samples less than the method blank concentrations were U qualified as not detected at the reported concentrations and the radium-226 concentrations in the associated samples greater than the method blank concentrations were J+ qualified as estimated with high bias.

In addition, the combined radium-226 + 228 concentrations in samples HGWA-2, HGWC-17 and HGWC-14 were J+ qualified as estimated with high bias, based on professional and technical judgment.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-4	Radium-226	0.493	NA	0.493	U	3
HGWA-5	Radium-226	0.547	NA	0.547	U	3
HGWA-6	Radium-226	0.676	NA	0.676	J+	3
MW-23D	Radium-226	0.582	NA	0.582	U	3
MW-22	Radium-226	0.688	NA	0.688	J+	3
HGWA-1	Radium-226	0.577	NA	0.577	U	3
HGWA-2	Radium-226	0.903	NA	0.903	J+	3
HGWA-2	Combined Radium 226 + 228	1.58	NA	1.58	J+	3
HGWC-16	Radium-226	0.707	NA	0.707	J+	3
HGWC-17	Radium-226	0.384	NA	0.384	U	3
HGWC-17	Combined Radium 226 + 228	1.33	NA	1.33	J+	3
FB-02	Radium-226	0.526	NA	0.526	U	3
HGWC-14	Radium-226	1.29	NA	1.29	J+	3
HGWC-14	Combined Radium 226 + 228	1.84	NA	1.84	J+	3
HGWC-18	Radium-226	1.38	NA	1.38	J+	3
HGWC-18	Combined Radium 226 + 228	2.35	NA	2.35	J+	3
MW-21D	Radium-226	0.965	NA	0.965	J+	3
MW-21D	Combined Radium 226 + 228	1.94	NA	1.94	J+	3

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
FD-01	Radium-226	2.05	NA	2.05	J+	3

pCi/L- picocuries per liter

NA-not applicable

4.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

4.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCS/LCS duplicate (LCSD) pairs were reported for radium-226. Two LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria, with the following exception.

The recovery of radium-228 in the LCS in the batch 387208 was low and outside the laboratory specified acceptance criteria. Therefore, the non-detect radium-228 results in the associated samples were UJ qualified as estimated less than the MDCs. Also, the non-detect combined radium 226 + 228 results in the associated samples were UJ qualified as estimated less than the MDCs and combined radium 226 + 228 concentrations in the associated samples were J qualified as estimated.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-4	Radium-228	0.444	U	0.444	UJ	5
HGWA-4	Combined Radium 226 + 228	0.937	U	0.937	UJ	5
HGWA-5	Radium-228	-0.123	U	-0.123	UJ	5
HGWA-5	Combined Radium 226 + 228	0.547	U	0.547	UJ	5
HGWA-6	Radium-228	-0.000374	U	-0.000374	UJ	5
HGWA-6	Combined Radium 226 + 228	0.676	U	0.676	UJ	5
MW-23D	Radium-228	0.382	U	0.382	UJ	5
MW-23D	Combined Radium 226 + 228	0.964	U	0.964	UJ	5
MW-22	Radium-228	0.184	U	0.184	UJ	5
MW-22	Combined Radium 226 + 228	0.872	U	0.872	UJ	5
HGWA-1	Radium-228	0.0334	U	0.0334	UJ	5
HGWA-1	Combined Radium 226 + 228	0.610	U	0.610	UJ	5
HGWA-2	Radium-228	0.680	U	0.680	UJ	5
HGWA-2	Combined Radium 226 + 228	1.58	NA	1.58	J	5
HGWA-3	Radium-228	0.0192	U	0.0192	UJ	5

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-3	Combined Radium 226 + 228	0.249	U	0.249	UJ	5
HGWC-16	Radium-228	0.613	U	0.613	UJ	5
HGWC-16	Combined Radium 226 + 228	1.32	U	1.32	UJ	5
HGWC-17	Radium-228	0.950	U	0.950	UJ	5
HGWC-17	Combined Radium 226 + 228	1.33	NA	1.33	J	5
FB-02	Radium-228	0.368	U	0.368	UJ	5
FB-02	Combined Radium 226 + 228	0.894	U	0.894	UJ	5
HGWC-14	Radium-228	0.548	U	0.548	UJ	5
HGWC-14	Combined Radium 226 + 228	1.84	NA	1.84	J	3

pCi/L- picocuries per liter

U-not detected at or above the MDC

NA-not applicable

4.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for radium-226 using sample FD-01. The RER (2σ) result was within the laboratory specified acceptance criteria.

The RER of radium-226 in the laboratory duplicate was high and outside the laboratory specified acceptance criteria. Therefore, the radium-226 and combined radium 226 + 228 concentrations in sample FD-01 were J qualified as estimated.

One batch laboratory duplicate was also reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
FD-01	Radium-226	2.05	NA	2.05	J	12
FD-01	Combined Radium 226 + 228	2.55	NA	2.55	J	12

pCi/L- picocuries per liter

NA-not applicable

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-02. Radium-228 was not detected in the field blank above the MDC.

Radium-226 (0.526 pCi/L) was detected in FB-02 at a concentration greater than the MDC. Since the radium-226 concentration in FB-02 was U qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

4.10 Field Duplicate

One field duplicate sample was collected with the sample set, FD-01. Acceptable precision ($RER(2\sigma) < 3$) was demonstrated between the field duplicate and the original sample, HGWC-18.

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 recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: August 5, 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 2630472 and 30356789**

SITE: Plant Hammond AP-2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of fifteen aqueous samples, one field duplicate sample and one field blank, collected 25 March - 1 April 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
- 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. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001); and
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2630472001	HGWA-1
2630472002	HGWA-3
2630472003	HGWA-2
2630472004	HGWA-6
2630472005	HGWA-5
2630472006	HGWA-4
2630472007	HGWC-15
2630472008	MW-22
2630472009	HGWC-14

Laboratory ID	Client ID
2630472010	FD-02
2630472011	HGWC-16
2630472012	FB-02
2630472013	HGWC-17
2630472014	HGWC-18
2630472015	MW-21D
2630472016	MW-33
2630472017	MW-23D

The samples in laboratory report 2630472 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:

- 2630472: 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.
- 2630472: The year was not documented for the collection times for the samples listed on pages 2, 7 and 10 of the COC. The samples were logged in with the collection year 2020.
- 2630472: There was a time discrepancy for the first sample transfer on page 3 of the COC. The relinquished by time was documented as 3/25/20 1817 and the received by time was documented as 3/25/20 1812.

- 2630472: A collection time was not listed on the COC for the field duplicate. The field duplicate was logged in with the collection time of 00:00.
- 2630472: There were time discrepancies for the second sample transfers on pages 6-7 of the COC. The relinquished by time was documented as 3/30/20 1903 and the received by time was documented as 3/30/20 1902.
- 2630472: The year was not documented for the relinquished by date for the fourth sample transfer on page 6 of the COC.
- 30356789: A collection time was not listed on the COC for the field duplicate. The field duplicate was logged in with the collection time of 00:01.
- 30356789: The relinquished by signature, date and time were not documented on page 1 of the COC.
- 30356789: The signatures, dates and times were not documented on page 3 of the COC.
- 30356789: The signatures, dates and times for the sample transfers for pages 4 of the COC were documented on separate pages.

The field pH data included with laboratory report 2630472 were not validated.

1.0 METALS

The samples were analyzed for calcium by USEPA methods 3010A/6010D and metals by USEPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number

of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Thirteen method blanks were reported (batches 45121, 45172, 45185, 45190, 45218, 45249, 45281, 45112, 45113, 45171, 45184, 45189 and 45226). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exceptions.

Arsenic was detected in the method blanks in batches 45189 and 45226 at estimated concentrations greater than the MDL and less than the RL. Therefore, the estimated arsenic 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**
FD-02	Arsenic	0.0048	J B	0.0050	U	3
HGWC-16	Arsenic	0.0011	J B	0.0050	U	3
HGWC-17	Arsenic	0.00080	J B	0.0050	U	3
MW-21D	Arsenic	0.0013	J B	0.0050	U	3
MW-23D	Arsenic	0.00082	J B	0.0050	U	3

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag indicating analyte was detected in 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 metals using sample HGWA-6. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria.

Twelve 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). Thirteen 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-02. Metals were not detected in the field blank above the MDLs, with the following exceptions.

Boron and chromium were detected in FB-02 at estimated concentrations greater than the MDLs and less than the RLs. Therefore, the estimated boron and chromium concentrations in the associated samples were U qualified as not detected at the RLs.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWA-1	Boron	0.025	J	0.10	U	3
HGWA-1	Chromium	0.00072	J	0.010	U	3
HGWA-3	Boron	0.0096	J	0.10	U	3
HGWA-2	Boron	0.039	J	0.10	U	3
HGWA-6	Boron	0.021	J	0.10	U	3
HGWA-5	Boron	0.0072	J	0.10	U	3
HGWA-4	Boron	0.012	J	0.10	U	3
HGWC-14	Chromium	0.00066	J	0.010	U	3
FD-02	Chromium	0.00041	J	0.010	U	3
HGWC-16	Chromium	0.00040	J	0.010	U	3
MW-33	Chromium	0.00069	J	0.010	U	3
MW-23D	Chromium	0.00086	J	0.010	U	3

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

1.8 Field Duplicate

One field duplicate sample was collected with the sample set, 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-14.

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 flag B 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 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 these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

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, 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). Five method blanks were reported for the anions (batches 533972, 533983, 533985, 534237 and 534425). The anions 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). Two sample set specific MS/MSD pairs were reported for the anions, using samples HGWA-1 and HGWC-17. The recovery and RPD results were within the laboratory specified acceptance criteria, with the following exceptions.

The recovery of chloride in the MSD using sample HGWA-1 was high and outside the laboratory specified acceptance criteria. Therefore, the chloride concentration in sample HGWA-1 was J+ qualified as estimated with high bias.

The recoveries of fluoride in the MS/MSD using sample HGWA-17 were high and outside the laboratory specified acceptance criteria. Since fluoride was not detected in sample HGWA-17, no qualifications were applied to the data.

Eight batch MS/MSD pairs were also reported for the anions. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWA-1	Chloride	20.4	NA	20.4	J+	4

mg/L-milligrams per liter

NA-not applicable

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). Five LCSs were reported for TDS and five LCSs were reported for the anions. The recovery results were within the laboratory specified acceptance criteria.

2.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported for TDS using samples HGWA-3 and HGWA-4. The RPD results were within the laboratory specified acceptance criteria.

Seven batch laboratory duplicates were also reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.7 Equipment Blank

An equipment blank was not collected with the sample set.

2.8 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 MDL.

2.9 Field Duplicate

One field duplicate sample was collected with the sample set, 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-14.

2.10 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

2.11 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The laboratory flags M1 and D6 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.

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 these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

3.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five method blanks were reported for the radium-228 data (batches 390462, 390595, 391344, 391019 and 391023). Four method blanks were reported for the radium-226 data (batches 391022, 390592, 391017 and 391343). Radium-226 and

radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

Radium-226 was detected above the MDC in the method blank in batch 390592 (0.444 pCi/L). Therefore, the radium-226 concentrations in the associated samples less than the method blank concentration were U qualified as not detected at the reported concentrations and the radium-226 concentration in the associated sample greater than the method blank concentration was J+ qualified as estimated with high bias. In addition, based on professional and technical judgment the combined radium 226 + 228 concentration in sample HGWA-1 was J+ qualified as estimated with high bias.

Radium-228 was detected above the MDCs in the method blanks in batches 390462 (0.720 pCi/L) and 391019 (0.771 pCi/L). Therefore, the radium-228 concentration in the associated sample greater than the method blank concentration was J+ qualified as estimated with high bias. In addition, based on professional and technical judgment the combined radium 226 + 228 concentration in sample HGWA-1 was J+ qualified as estimated with high bias.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-1	Radium-226	0.221	NA	0.221	U	3
HGWA-1	Radium-228	4.14	NA	4.14	J+	3
HGWA-1	Combined Radium 226 + 228	4.36	NA	4.36	J+	3
HGWA-3	Radium-226	0.377	NA	0.377	U	3
HGWA-2	Radium-226	0.621	NA	0.621	J+	3
HGWA-6	Radium-226	0.495	NA	0.495	J+	3

pCi/L- picocuries per liter

NA-not applicable

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCS/LCS duplicate (LCSD) pairs were reported for radium-226. Five LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria.

3.6 Laboratory Duplicate

One sample set laboratory duplicate was reported for radium-226 using sample MW-21D. The RER (2σ) result was 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.

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

An equipment blank was not collected with the sample set.

3.9 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.

3.10 Field Duplicate

One field duplicate sample was collected with the sample set, FD-02. Acceptable precision (RER (2σ) < 3) was demonstrated between the field duplicate and the original sample, HGWC-14.

3.11 Sensitivity

The samples were reported to the MDCs. No elevated nondetect 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 recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: August 5, 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 92482645 and 92482649**

SITE: Plant Hammond AP-2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of six aqueous samples, one field filtered aqueous sample and one field blank, collected 17-18 June 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:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3010A/6010D and 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:

- Alkalinity by Standard Method 2320B
- Sulfide by Standard Method 4500 S2D
- 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. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001); and
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
92482645001	MW-21D
92482645002	MW-33
92482645003	MW-35
92482645004	FB-02
92482645005	MW-34D
92482645006	MW-36D
92482645007	MW-37D
92482645008	MW-37D, FILTERED

Laboratory ID	Client ID
92482649001	MW-21D
92482649002	MW-33
92482649003	MW-35
92482649004	FB-02
92482649005	MW-34D
92482649006	MW-36D
92482649007	MW-37D
92482649008	MW-37D, FILTERED

The samples in laboratory report 92482649 were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

Incorrect error corrections were observed on the COCs, 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 with laboratory report 92482649 were not validated.

1.0 METALS

The samples were analyzed for metals by USEPA methods 3010A/6010D and 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
- ✓ Total vs Dissolved Metals Assessment
- ⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 548539, 548844, 548509 and 548895). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

Magnesium was detected in the method blank in batch 2919468 at an estimated concentration greater than the MDL and less than the RL. Therefore, the estimated magnesium concentration in the associated sample was U qualified as not detected at the RL.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
FB-02	Magnesium	0.026	J B	0.050	U	3

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag indicating analyte was detected in 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 metals by USEPA method 6010D using sample MW-35. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of calcium, magnesium and manganese in the MS/MSD pair were low and outside the laboratory specified acceptance criteria. Since the calcium, magnesium and manganese concentrations in sample MW-35 were greater than four times the spiked concentrations, no qualifications were applied to the data.

Three batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four 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-02. Metals were not detected in the field blank above the MDLs, with the following exceptions.

Boron, calcium and magnesium were detected in FB-02 at estimated concentrations greater than the MDLs and less than the RLs. Since calcium and magnesium was detected above the RLs in the associated samples, no qualifications were applied to the calcium and magnesium data. However, the estimated boron concentration in the associated sample was U qualified as not detected at the RL.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
MW-36D	Boron	0.067	J	0.10	U	3

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

1.8 Field Duplicate

One field duplicate sample was collected with the sample set, 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-14.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Total vs Dissolved Metals Assessment

Sample MW-37D was collected as both an unfiltered and filtered sample to report total and dissolved metals, respectively. The total metal concentrations were greater than the dissolved metal concentrations, with the following exceptions.

The dissolved calcium, magnesium and sodium concentrations were greater than the total calcium, magnesium and sodium concentrations. Since the RPDs between the total and dissolved concentrations were less than 30%, no qualifications were applied to the data, based on professional and technical judgment.

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 flags B, M1 and M6 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 WET CHEMISTRY

The samples were analyzed for TDS by Standard method 2540C, alkalinity by Standard Method 2320B, sulfide by Standard Method 4500-S2D 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

2.1 Overall Assessment

The wet chemistry data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset 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 alkalinity analysis of a water sample is 14 days from sample collection to analysis. The holding time for the sulfide 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). Two method blanks were reported for TDS (batches 548606 and 548907), two method blanks were reported for alkalinity (batches 549851 and 550396), one method blank was reported for sulfide (batch 549382) and three method blanks were reported for the anions (batches 549186, 549584 and 550052). 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

alkalinity using sample MW-35, two sample set specific MS/MSD pairs were reported for sulfide using samples MW-21D and MW-33 and one sample set specific MS/MSD pair was reported for the anions using sample MW-37D, FILTERED. The recovery and RPD results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of sulfide in the MS/MSD pair using sample MW-33 were low and outside the laboratory specified acceptance criteria. Therefore, the non-detect sulfide result in sample MW-33 was UJ qualified as estimated less than the MDL.

Three batch MS/MSD pairs were also reported for alkalinity and five 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
MW-33	Sulfide	0.050	U	0.050	UJ	4

mg/L- milligram per liter

U-not detected at or above the MDL

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 for TDS, two LCSs were reported for alkalinity, one LCS was reported for sulfide and three LCSs were reported for the anions. The recovery results were within the laboratory specified acceptance criteria.

2.6 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.

2.7 Equipment Blank

An equipment blank was not collected with the sample set.

2.8 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 MDL.

2.9 Field Duplicate

One field duplicate sample was collected with the sample set, 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-14.

2.10 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

2.11 Total vs Dissolved Wet Chemistry Assessment

Sample MW-37D was collected as both an unfiltered and filtered sample to report total and dissolved wet chemistry parameters, respectively. The wet chemistry concentrations in the unfiltered sample (total) were greater than the concentrations in the filtered sample (dissolved), with the following exceptions.

The dissolved chloride and sulfate concentrations were greater than the total chloride and sulfate concentrations. Since the RPDs between the total and dissolved concentrations were less than 30%, no qualifications were applied to the data, based on professional and technical judgment.

2.12 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.

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 these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

3.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported for the radium-228 data (batch 402596). One method blank was reported for the radium-226 data (batch 403006). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs).

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS/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) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria.

3.6 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.

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

An equipment blank was not collected with the sample set.

3.9 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.

3.10 Field Duplicate

One field duplicate sample was collected with the sample set, FD-02. Acceptable precision ($RER(2\sigma) < 3$) was demonstrated between the field duplicate and the original sample, HGWC-14.

3.11 Sensitivity

The samples were reported to the MDCs. No elevated nondetect results were reported.

3.12 Total vs Dissolved Radiochemistry Assessment

Sample MW-37D was collected as both an unfiltered and filtered sample to report total and dissolved radium-226 and radium-228, respectively. The total radium-226 and radium-228 concentrations were greater than the dissolved radium-226 and radium-228 concentrations.

3.13 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 recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: December 14, 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 92495890 and 92495900**

SITE: Plant Hammond AP-2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of twenty-two aqueous samples, one filtered aqueous sample, one field duplicate and one field blank, collected 15-23 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:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3010A/6010D
- Mercury by USEPA Method 7470A
- 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:

- Alkalinity by Standard Method 2320B
- Sulfide by Standard Method 4500S2D
- 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
92495890001	HGWA-1
92495890002	HGWA-2
92495890003	HGWA-3
92495890004	HGWA-4
92495890005	HGWA-5
92495890006	HGWA-6
92495890007	HGWC-18
92495890008	HGWC-17
92495890009	HGWA-43D
92495890010	HGWA-44D
92495890011	HGWC-15
92495890012	HGWC-16
92495890013	MW-22
92495890014	MW-23D
92495890015	HGWA-42D
92495890016	FB-02
92495890017	FD-02
92495890018	HGWC-14
92495890019	MW-21D
92495890020	MW-33
92495890021	MW-35
92495890022	MW-34D

Laboratory ID	Client ID
92495890023	MW-36D
92495890024	MW-37D
92495890025	MW-34D FILTERED
92495900001	HGWA-1
92495900002	HGWA-2
92495900003	HGWA-3
92495900004	HGWA-4
92495900005	HGWA-5
92495900006	HGWA-6
92495900007	HGWC-18
92495900008	HGWC-17
92495900009	HGWA-43D
92495900010	HGWA-44D
92495900011	HGWC-15
92495900012	HGWC-16
92495900013	MW-22
92495900014	MW-23D
92495900015	HGWA-42D
92495900016	FB-02
92495900017	FD-02
92495900018	HGWC-14
92495900019	MW-21D

Laboratory ID	Client ID
92495900020	MW-33
92495900021	MW-35
92495900022	MW-34D

Laboratory ID	Client ID
92495900023	MW-36D
92495900024	MW-37D
92495900025	MW-34D FILTERED

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:

- The year was not documented on the *relinquished by* and *received by* dates for the first sample transfer on page 3 of the COC.
- The year was not documented for the *received by* date for the first sample transfer and *relinquished by* date for the second sample transfer on pages 4, 7 and 8 of the COC.
- The year was not documented for the *relinquished by* date for the first sample transfer on pages 5 and 9 of the COC.
- There were time discrepancies for the third sample transfer on page 1 and 3 of the COC. The *relinquished by* time was documented as 9/16/20 1113 and the *received by* time was documented as 9/16/20 1114.
- There were time discrepancies for the third sample transfer on page 2 of the COC. The *relinquished by* time was documented as 9/16/20 1113 and the *received by* time was documented as 9/16/20 1114.
- There were time discrepancies for the third sample transfer on pages 6-11 of the COC. The *relinquished by* time was documented as 9/18/20 1017 and the *received by* time was documented as 9/18/20 1020.
- The *received by* time was not documented for the first sample transfer on page 8 of the COC.
- The year was not documented for the collection times of samples HGWA-3, HGWA-1, HGWA-5, HGWA-6, HGWC-18, MW-23D, MW-42D, FB-02 and MW-35. The samples were logged in with the collection year of 2020.
- The collection date and times were not documented for samples MW-43D and MW-44D. Samples MW-43D and MW-44D were logged in with the collection date of 09/16/2020 and collection times of 11:58 and 15:18, respectively.
- A collection time was not documented on the COC for field duplicate, FD-02. FD-02 was logged in with the collection time of 00:00.

The field pH data included in the laboratory report were not validated.

Laboratory report 92495900 was revised on October 19, 2020 to correct a field pH typo.

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). Nine method blanks were reported (batches 568201, 568747, 568748, 569461, 568198, 568430, 568749, 569670 and 570000). Metals were not detected in the method blanks above the method detection limits (MDLs) with the following exceptions.

Potassium was detected in the method blanks in batches 568201 and 568748 at estimated concentrations greater than the MDL and less than the reporting limit (RL). Since potassium was detected above the RL in the associated samples, 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). Sample set specific MS/MSD pairs were reported by USEPA method 6010D and USEPA method 6020B using sample HGWA-4. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

The MS recovery was low, and the MSD recovery was high, both outside the laboratory specified acceptance criteria for calcium in the MS/MSD pair using sample HGWA-4. Since the calcium concentration in sample HGWA-4 was greater than four times the spiked concentration, no qualifications were applied to the data.

Seven 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). Nine 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-02. Metals were not detected in the field blank above the MDLs, with the following exceptions.

Potassium and boron were detected in FB-02 at estimated concentrations greater than the MDLs and less than the RLs. Since potassium was detected above the RL in the associated samples, no qualifications were applied to the potassium data. However, the estimated boron 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-1	Boron	0.017	J	0.10	U	3
HGWA-2	Boron	0.044	J	0.10	U	3
HGWA-3	Boron	0.0071	J	0.10	U	3
HGWA-4	Boron	0.013	J	0.10	U	3
HGWA-5	Boron	0.012	J	0.10	U	3
HGWA-6	Boron	0.016	J	0.10	U	3
HGWA-43D	Boron	0.061	J	0.10	U	3
HGWA-42D	Boron	0.098	J	0.10	U	3
MW-36D	Boron	0.055	J	0.10	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, 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-15.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Total vs Dissolved Metals Assessment

Sample MW-34D 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, with the following exceptions.

The concentrations of seven metals concentrations in MW-34D FILTERED were greater than the concentrations in MW-34D. Since the RPDs between these concentrations were less than 30% and based on professional and technical judgment, no qualifications were applied to the data.

Beryllium, cadmium, chromium and lead were not detected in MW-34D and were detected in MW-34D FILTERED at estimated concentrations greater than the MDLs and less than the RLs. Therefore, based on professional and technical judgment the non-detect results of beryllium, cadmium, chromium and lead in MW-34D were UJ qualified as estimated less than the MDLs and the beryllium, cadmium, chromium and lead concentrations in MW-34D FILTERED were J qualified as estimated.

Iron was detected at an estimated concentration greater than the MDL and less than the RL in MW-34D and iron was detected at a concentration greater than the RL in MW-34D FILTERED. Therefore, based on professional and technical judgment, the iron concentrations in MW-34D and MW-34D FILTERED were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD	Validation Result	Validation Qualifier	Reason Code
MW-34D	Calcium	556	NA	10	NA	NA	NA
MW-34D FILTERED	Calcium	616	NA		NA	NA	NA
MW-34D	Iron	0.023	J	NC	0.023	J	13
MW-34D FILTERED	Iron	2.0	NA		2.0	J	13
MW-34D	Magnesium	49.7	NA	8	NA	NA	NA
MW-34D FILTERED	Magnesium	53.6	NA		NA	NA	NA
MW-34D	Manganese	3.7	NA	10	NA	NA	NA
MW-34D FILTERED	Manganese	4.1	NA		NA	NA	NA
MW-34D	Potassium	9.6	NA	10	NA	NA	NA
MW-34D FILTERED	Potassium	10.6	NA		NA	NA	NA
MW-34D	Sodium	15.4	NA	9	NA	NA	NA
MW-34D FILTERED	Sodium	16.8	NA		NA	NA	NA
MW-34D	Barium	0.038	NA	15	NA	NA	NA
MW-34D FILTERED	Barium	0.044	NA		NA	NA	NA
MW-34D	Beryllium	0.000046	U	NC	0.000046	UJ	13
MW-34D FILTERED	Beryllium	0.00018	J		0.00018	J	13
MW-34D	Cadmium	0.00012	U	NC	0.00012	UJ	13
MW-34D FILTERED	Cadmium	0.00019	J		0.00019	J	13
MW-34D	Chromium	0.00055	U	NC	0.00055	UJ	13
MW-34D FILTERED	Chromium	0.0027	J		0.0027	J	13
MW-34D	Cobalt	0.0056	NA	22	NA	NA	NA
MW-34D FILTERED	Cobalt	0.0070	NA		NA	NA	NA
MW-34D	Lead	0.000036	U	NC	0.000036	UJ	13
MW-34D FILTERED	Lead	0.0010	J		0.0010	J	13

mg/L-milligrams per liter

J-estimated concentration greater than the MDL and less than the RL

U-not detected at or above the MDL

M1-laboratory flag indicating MS recovery was outside the QC limits

NA-not applicable

NC-not calculable

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 flags B and 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). One method blank was reported (batch 572608). Mercury was not detected in the method blank above the MDL.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One batch MS/MSD pair was reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS was reported. The recovery result was within the laboratory specified acceptance criteria.

2.6 Equipment Blank

An equipment blank was not collected with the sample set.

2.7 Field Blank

One field blank was collected with the sample 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-02. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample, HGWC-15.

2.9 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

2.10 Total vs Dissolved Mercury Assessment

Sample MW-34D 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, alkalinity by Standard Method 2320B, sulfide by Standard Method 4500-S2D 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 alkalinity analysis of a water sample is 14 days from sample collection to analysis. The holding time for the sulfide analysis of a water sample is 7 days from sample collection to analysis. The holding time for the anions (fluoride, chloride, 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). Six method blanks were reported for TDS (batches 567147, 567372, 568080, 568395, 568648 and 569350), five method blanks were reported for alkalinity (batches 568673, 568674, 568970, 569912 and 570520), five method blanks were reported for sulfide (batches 568020, 568021, 568022, 568633 and 569576) and seven method blanks were reported for the anions (batches 567529, 567607, 567943, 568377, 568379, 569514 and 569515). 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). Sample set specific MS/MSD pairs were reported for alkalinity using samples HGWA-1, HGWC-18 and HGWA-44D, sulfide using samples HGWA-1 and HGWA-2 and the anions using samples FB-02 and MW-21D. The recovery and RPD results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of alkalinity in the MS/MSD pair using sample HGWA-44D were low and outside the laboratory specified acceptance criteria. Since the alkalinity concentration in sample HGWA-44D was greater than four times the spiked concentration, no qualifications were applied to the data.

The recoveries of sulfide in the MS/MSD pair using sample HGWA-2 were low and outside the laboratory specified acceptance criteria. Therefore, the non-detect sulfide result in sample HGWA-2 was UJ qualified as estimated less than the MDL.

The recoveries of sulfate in the MS/MSD pair using sample MW-21D were low and outside the laboratory specified acceptance criteria. Since the sulfate concentration in sample MW-21D was greater than four times the spiked concentration, no qualifications were applied to the data.

Seven batch MS/MSD pairs were reported for alkalinity, eight batch MS/MSD pairs were reported for sulfide 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
HGWA-2	Sulfide	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

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). Six LCSs were reported for TDS, five LCSs were reported for alkalinity, five LCSs were reported for sulfide and seven LCSs were reported for the anions. The recovery results were within the laboratory specified acceptance criteria.

3.6 Laboratory Duplicate

Four sample set specific laboratory duplicates were reported using samples HGWC-18, HGWC-17, HGWA-42D and MW-37D. The RPD results were within the laboratory specified acceptance criteria.

Eight 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-02. 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-02. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample, HGWC-15.

3.10 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

3.11 Total vs Dissolved Wet Chemistry Assessment

Sample MW-34D was collected as both an unfiltered and filtered sample to report total and dissolved wet chemistry, respectively. The total wet chemistry concentrations were greater than or equal to the dissolved wet chemistry concentrations, with the following exceptions.

The chloride, sulfate, total alkalinity, bicarbonate alkalinity and TDS concentrations in MW-34D FILTERED were greater than the chloride, sulfate, total alkalinity, bicarbonate alkalinity and TDS concentrations in MW-34D. Since the RPDs between these concentrations were less than 30% and based on professional and technical judgment, no qualifications were applied to the data.

Fluoride and sulfide were not detected in MW-34D and were detected in MW-34D FILTERED at estimated concentrations greater than the MDLs and less than the RLs. Therefore, based on professional and technical judgment the non-detect fluoride and sulfide results in MW-34D were UJ qualified as estimated less than the MDLs and the fluoride and sulfide concentrations in MW-34D FILTERED were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD	Validation Result	Validation Qualifier	Reason Code
MW-34D	Chloride	294	NA	0	NA	NA	NA
MW-34D FILTERED	Chloride	295	NA		NA	NA	NA
MW-34D	Fluoride	0.050	U	NC	0.050	UJ	13
MW-34D FILTERED	Fluoride	0.086	J		0.086	J	13
MW-34D	Sulfate	1080	NA	2	NA	NA	NA
MW-34D FILTERED	Sulfate	1100	NA		NA	NA	NA
MW-34D	Total Alkalinity	94.5	NA	23	NA	NA	NA
MW-34D FILTERED	Total Alkalinity	119	NA		NA	NA	NA
MW-34D	Alkalinity, Bicarbonate	94.5	NA	23	NA	NA	NA
MW-34D FILTERED	Alkalinity, Bicarbonate	119	NA		NA	NA	NA
MW-34D	TDS	2430	NA	5	NA	NA	NA
MW-34D FILTERED	TDS	2550	NA		NA	NA	NA
MW-34D	Sulfide	0.050	U	NC	0.050	UJ	13

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD	Validation Result	Validation Qualifier	Reason Code
MW-34D FILTERED	Sulfide	0.086	J		0.086	J	13

mg/L-milligrams per liter

J-estimated concentration greater than the MDL and less than the RL

U-not detected at or above the MDL

NA-not applicable

NC-not calculable

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 flags M1, MW and M6 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). Five method blanks were reported for the radium-228 data (batches 417131, 415620, 415618, 418037 and 415619). Five method blanks were reported for the radium-226 data (batches 415616, 418032, 415615, 415617 and 417130). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

Radium-226 was detected above the MDC in the method blank in batch 415617 (1.55 pCi/L). Therefore, the radium-228 concentrations in the associated samples greater than the MDCs and less than the method blank concentration were U qualified as not detected at the reported concentrations. In addition, based on professional and technical judgment, the combined radium concentrations in samples MW-33 and MW-35 were J+ qualified as estimated with high biases.

Radium-228 was detected above the MDC in the method blank in batch 417131 (0.888 pCi/L). Since radium-228 was not detected above the MDCs in the associated samples, no qualifications were applied to the data.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
MW-33	Radium-226	0.916	NA	0.916	U	3
MW-33	Combined Radium 226 + 228	2.53	NA	2.53	J+	3
MW-35	Radium-226	0.563	NA	0.563	U	3
MW-35	Combined Radium 226 + 228	3.85	NA	3.85	J+	3

pCi/L- picocuries per liter

NA-not applicable

4.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

4.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS and four LCS/LCS duplicate (LCSD) pairs were reported for radium-226. Five LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria.

4.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported using sample HGWA-42D. The RER (2σ) result was within the laboratory specified acceptance criteria.

Four 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-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 set, FD-02. Acceptable precision (RER (2σ) < 3) was demonstrated between the field duplicate and the original sample, HGWC-15.

4.11 Sensitivity

The samples were reported to the MDCs. No elevated nondetect results were reported.

4.12 Total vs Dissolved Radiochemistry Assessment

Sample MW-34D 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, with the following exception.

Radium-226 was detected in MW-34D FILTERED at a concentration greater than the MDC and was not detected in MW-34D at a concentration greater than the MDC. Since the RER between the radium-226 concentrations were less than 3 and based on professional and technical judgment, no qualifications were applied to the data.

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

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 92505468 and 92505497**

SITE: Plant Hammond AP-2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of three aqueous samples, one filtered aqueous sample 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
92505468001	HGWA-43D
92505468002	EB-01
92505468003	HGWA-44D
92505468004	HGWA-44D FILTERED
92505468005	HGWA-42D

Laboratory ID	Client ID
92505497001	HGWA-43D
92505497002	EB-01
92505497003	HGWA-44D
92505497004	HGWA-44D FILTERED
92505497005	HGWA-42D

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 transfer 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 and for the third sample transfer on page two of the COC.
- The *received by* time was not documented for the second sample transfer on page two of the COC.
- The year was not documented for the *received by* date for the first and second sample transfer and the *relinquished by* date for the second sample transfer on page three of the COC.

- The *relinquished by* signature, date and time were not documented for the third transfer on page three of the COC.
- The year was not documented for the collection times of samples HGWA-43D 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
- ✓ 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). Four method blanks were reported (batches 580529, 581313, 581474 and 581476). 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-43D	Antimony	0.00043	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). Four 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 Total vs Dissolved Metals Assessment

Sample HGWC-44D 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, with the following exception.

One dissolved metals concentration was greater than the associated total metal concentration. Since the RPD between the total and dissolved concentrations was less than 30%, no qualifications were applied to the data, based on professional and technical judgment.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD
HGWC-44D	Barium	0.38	NA	3
HGWC-44D FILTERED	Barium	0.39	NA	

mg/L-milligrams per liter

NA-not applicable

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 B 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 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 580637 and 580803). 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

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 Total vs Dissolved Mercury Assessment

Sample HGWC-44D 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). Two method blanks were reported for TDS (batches 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). 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

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 MDLs, 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 based on technical and professional judgement.

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 Total vs Dissolved Wet Chemistry Assessment

Sample HGWC-44D was collected as both an unfiltered and filtered sample to report total and dissolved wet chemistry, respectively. The total wet chemistry concentrations were greater than or equal to the dissolved wet chemistry concentrations, with the following exception.

The TDS concentration in HGWC-44D FILTERED was greater than the TDS concentration in HGWC-44D. Since the RPD between the TDS concentrations was less than 30%, no qualifications were applied to the data, based on professional and technical judgment.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD
HGWC-44D	TDS	287	NA	5
HGWC-44D FILTERED	TDS	301	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. 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
- ✓ 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). Two method blanks were reported for the radium-228 data (batches 425494 and 426455). One method blank was reported for the radium-226 data (batch 426374). 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. 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

Laboratory duplicates were not reported with the data.

4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory specified acceptance criteria.

4.8 Equipment Blank

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 Total vs Dissolved Radiochemistry Assessment

Sample HGWC-44D 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.

* * * * *

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

Purge Logs

Product Name: Low-Flow System

Date: 2020-01-22 13:59:40

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 642531
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-33
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 22.27 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:42:51	300.02	18.39	4.44	2839.89	2.96	22.38	1.60	99.52
Last 5	13:47:51	600.02	18.40	4.48	2838.59	2.76	22.39	1.31	97.45
Last 5	13:52:51	900.02	18.48	4.46	2834.81	2.23	22.38	1.38	96.17
Last 5	13:57:51	1200.03	18.43	4.51	2837.06	1.40	22.38	1.46	95.62
Last 5									
Variance 0			0.01	0.04	-1.30			-0.29	-2.06
Variance 1			0.09	-0.02	-3.78			0.07	-1.29
Variance 2			-0.05	0.05	2.25			0.08	-0.55

Notes

Two bottles: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B) and one 500-mL plastic bottle for TDS and SO4 (EPA 300.0). Total depth = 38.28 ft.

Grab Samples

MW-33
Grab

Product Name: Low-Flow System

Date: 2020-03-02 11:42:55

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 339797
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 1 ft

Well Information:

Well ID HGWA-1
Well diameter 2 in
Well Total Depth 32.50 ft
Screen Length 10 ft
Depth to Water 7.40 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 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:19:03	600.02	15.93	7.11	666.53	7.60	8.00	0.41	51.90
Last 5	11:24:03	900.02	15.93	7.10	661.30	1.47	7.90	0.65	48.56
Last 5	11:29:03	1200.02	15.93	7.10	658.39	1.47	8.00	0.44	45.57
Last 5	11:34:03	1500.02	15.93	7.10	655.91	0.97	7.90	0.42	47.31
Last 5	11:39:03	1800.02	15.95	7.10	653.55	1.11	7.90	0.41	45.43
Variance 0			0.00	-0.00	-2.91			-0.20	-2.98
Variance 1			0.00	-0.00	-2.47			-0.02	1.74
Variance 2			0.02	0.00	-2.36			-0.01	-1.88

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-1
Grab

Product Name: Low-Flow System

Date: 2020-03-02 10:43:51

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 538243
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 22 ft

Pump placement from TOC 22 ft

Well Information:

Well ID HGWA-2
Well diameter 2 in
Well Total Depth 27.95 ft
Screen Length 10 ft
Depth to Water 4.91 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5831953 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 µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:22:31	900.03	15.33	5.53	174.25	20.70	4.97	0.35	173.35
Last 5	10:27:31	1200.02	15.23	5.49	173.83	7.23	4.97	0.33	176.62
Last 5	10:32:31	1500.02	15.29	5.46	172.25	7.37	4.97	0.30	180.37
Last 5	10:37:31	1800.02	15.35	5.44	173.27	5.01	4.97	0.31	182.67
Last 5	10:42:31	2100.02	15.54	5.43	172.56	4.96	4.97	0.33	181.74
Variance 0			0.06	-0.03	-1.59			-0.03	3.76
Variance 1			0.06	-0.02	1.02			0.01	2.30
Variance 2			0.19	-0.01	-0.71			0.02	-0.93

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-2
Grab

Product Name: Low-Flow System

Date: 2020-03-02 12:31:45

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 538243
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 39 ft

Pump placement from TOC 39 ft

Well Information:

Well ID HGWA-3
Well diameter 2 in
Well Total Depth 44.87 ft
Screen Length 10 ft
Depth to Water 4.47 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6590735 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 µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:10:12	300.03	15.84	6.55	402.51	8.72	4.48	0.87	-43.77
Last 5	12:15:12	600.02	16.03	6.67	404.12	3.34	4.48	0.40	-63.37
Last 5	12:20:13	900.80	16.09	6.78	403.85	2.17	4.78	0.33	-71.73
Last 5	12:25:13	1200.80	16.13	6.86	403.76	1.76	4.78	0.31	-76.43
Last 5	12:30:13	1500.80	16.17	6.94	403.39	0.86	4.78	0.33	-79.32
Variance 0			0.06	0.11	-0.28			-0.07	-8.36
Variance 1			0.04	0.09	-0.08			-0.02	-4.70
Variance 2			0.04	0.08	-0.37			0.02	-2.90

Notes

SmarTroll malfunctioned. Restarting Low-Flow purge.

Product Name: Low-Flow System

Date: 2020-03-02 12:49:48

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 538243
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-3
Well diameter 2 in
Well Total Depth 44.87 ft
Screen Length 10 ft
Depth to Water 4.47 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 12.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:38:16	300.02	16.22	7.03	403.19	0.71	4.78	0.31	-83.40
Last 5	12:43:16	600.02	16.22	7.08	403.23	0.62	4.78	0.29	-84.82
Last 5	12:48:16	900.02	16.21	7.12	402.38	0.62	4.78	0.30	-86.31
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.01	0.05	0.04			-0.02	-1.42
Variance 2			-0.01	0.04	-0.85			0.00	-1.49

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-3
Grab

Product Name: Low-Flow System

Date: 2020-03-02 14:23:51

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 339797
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 20 ft

Pump placement from TOC 2 ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth 25.80 ft
Screen Length 10 ft
Depth to Water 3.80 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5742685 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 µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:02:16	900.02	15.03	5.85	70.99	3.89	4.00	1.76	131.74
Last 5	14:07:16	1200.02	15.04	5.74	71.79	3.96	4.00	1.85	128.20
Last 5	14:12:16	1500.02	14.99	5.67	73.93	3.97	4.00	1.73	125.87
Last 5	14:17:16	1800.02	15.03	5.65	76.17	3.74	4.00	1.73	119.57
Last 5	14:22:16	2100.02	15.04	5.63	76.90	3.91	4.00	1.68	116.80
Variance 0			-0.05	-0.07	2.14			-0.12	-2.33
Variance 1			0.04	-0.03	2.24			0.00	-6.31
Variance 2			0.01	-0.01	0.74			-0.05	-2.77

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-4
Grab

Product Name: Low-Flow System

Date: 2020-03-02 11:53:51

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 51 ft

Pump placement from TOC 45.52 ft

Well Information:

Well ID HGWA-6
Well diameter 2 in
Well Total Depth 50.52 ft
Screen Length 10 ft
Depth to Water 3.08 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.7126346 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:31:53	300.13	16.87	7.46	325.31	3.56	6.05	1.49	-56.03
Last 5	11:36:53	600.02	16.73	7.57	325.09	2.13	6.05	0.74	-95.08
Last 5	11:41:53	900.02	16.87	7.62	325.10	2.17	6.05	0.27	-110.18
Last 5	11:46:53	1200.02	16.93	7.64	324.75	1.12	6.05	0.22	-110.52
Last 5	11:51:53	1500.02	17.00	7.67	324.98	1.22	6.05	0.21	-111.64
Variance 0			0.14	0.05	0.01			-0.47	-15.10
Variance 1			0.06	0.03	-0.36			-0.05	-0.35
Variance 2			0.07	0.03	0.23			-0.01	-1.11

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-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-6

Grab

Product Name: Low-Flow System

Date: 2020-03-03 11:15:32

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
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 38 ft

Well Information:

Well ID HGWC-14
Well diameter 2 in
Well Total Depth 43 ft
Screen Length 10 ft
Depth to Water 13.31 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6635369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.48 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	10:59:18	300.14	19.94	5.06	2792.12	4.18	23.35	1.41	219.21
Last 5	11:04:18	600.02	20.02	4.84	2791.98	3.40	23.35	0.46	222.69
Last 5	11:09:18	900.02	20.11	4.79	2789.34	2.85	23.35	0.50	218.09
Last 5	11:14:18	1200.02	20.17	4.77	2806.87	1.07	23.35	0.39	215.05
Last 5									
Variance 0			0.09	-0.22	-0.14			-0.95	3.48
Variance 1			0.09	-0.05	-2.64			0.04	-4.60
Variance 2			0.06	-0.02	17.53			-0.11	-3.05

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-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-14

Grab

Product Name: Low-Flow System

Date: 2020-03-03 12:16:48

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
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-15
Well diameter 2 in
Well Total Depth 38 ft
Screen Length 10 ft
Depth to Water 11.99 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6412198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 16.2 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	11:54:55	600.02	18.62	6.16	1441.41	5.26	13.34	1.67	153.32
Last 5	11:59:55	900.02	18.74	6.14	1444.71	2.87	13.34	1.04	150.15
Last 5	12:04:55	1200.02	18.86	6.09	1443.61	2.66	13.34	0.78	126.29
Last 5	12:09:55	1500.02	18.88	6.04	1390.53	2.43	13.34	0.68	112.05
Last 5	12:14:55	1800.02	18.91	6.00	1384.09	2.80	13.34	0.74	104.49
Variance 0			0.12	-0.05	-1.11			-0.26	-23.86
Variance 1			0.02	-0.05	-53.08			-0.10	-14.24
Variance 2			0.03	-0.04	-6.44			0.05	-7.56

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-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-15

Grab

Product Name: Low-Flow System

Date: 2020-03-03 12:15:46

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 538243
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 28 ft

Well Information:

Well ID HGWC-16
Well diameter 2 in
Well Total Depth 33.1 ft
Screen Length 10 ft
Depth to Water 7.46 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6099758 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 33.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	11:52:33	8399.83	18.51	7.10	1055.20	5.57	8.30	0.13	-38.49
Last 5	11:57:33	8699.83	18.55	7.10	1052.90	5.50	8.30	0.13	-38.79
Last 5	12:02:33	8999.83	18.77	7.10	1052.43	5.06	8.27	0.13	-38.86
Last 5	12:07:33	9299.83	18.85	7.10	1053.32	5.11	8.23	0.12	-36.70
Last 5	12:12:32	9599.67	18.90	7.10	1054.50	4.75	8.15	0.12	-36.18
Variance 0			0.22	-0.00	-0.48			-0.00	-0.07
Variance 1			0.08	-0.00	0.89			-0.00	2.16
Variance 2			0.04	-0.00	1.18			-0.00	0.52

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-16
Grab

Product Name: Low-Flow System

Date: 2020-03-03 13:55:50

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 538243
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 23 ft

Pump placement from TOC 23 ft

Well Information:

Well ID HGWC-17
Well diameter 2 in
Well Total Depth 27.8 ft
Screen Length 10 ft
Depth to Water 13.72 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5876587 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:33:47	300.03	19.57	6.48	1637.48	17.30	14.04	0.36	198.06
Last 5	13:38:47	600.07	19.50	6.41	1647.12	14.60	14.04	0.21	220.93
Last 5	13:43:47	900.03	19.49	6.38	1644.25	13.60	14.04	0.17	238.47
Last 5	13:48:47	1200.02	19.14	6.36	1652.35	7.52	14.04	0.17	258.60
Last 5	13:53:47	1500.02	19.07	6.35	1661.54	4.54	14.04	0.17	261.84
Variance 0			-0.02	-0.03	-2.88			-0.04	17.54
Variance 1			-0.35	-0.01	8.11			0.00	20.13
Variance 2			-0.07	-0.01	9.19			-0.00	3.24

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-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-17
Grab

Product Name: Low-Flow System

Date: 2020-03-03 09:04:56

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 25 ft

Pump placement from TOC 22.8 ft

Well Information:

Well ID HGWC-18
Well diameter 2 in
Well Total Depth 27.8 ft
Screen Length 10 ft
Depth to Water 14.19 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5965856 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 5.4 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:47:18	300.15	15.93	4.90	2044.41	4.28	14.64	0.93	285.86
Last 5	08:52:18	600.03	16.01	4.61	2098.38	2.06	14.64	0.67	293.09
Last 5	08:57:18	900.02	16.04	4.57	2110.46	1.73	14.64	0.60	295.86
Last 5	09:02:18	1200.02	16.06	4.55	2112.31	1.22	14.64	0.58	295.63
Last 5									
Variance 0			0.08	-0.29	53.97			-0.27	7.23
Variance 1			0.03	-0.04	12.08			-0.06	2.77
Variance 2			0.02	-0.01	1.85			-0.02	-0.23

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-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-18
Grab
FD-01
Grab

Product Name: Low-Flow System

Date: 2020-03-03 10:10:53

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 51 ft

Pump placement from TOC 46.8 ft

Well Information:

Well ID MW-21D
Well diameter 2 in
Well Total Depth 51.8 ft
Screen Length 10 ft
Depth to Water 13.05 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3176346 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 10.32 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	09:49:09	600.02	17.36	6.41	2429.84	2.82	13.91	0.41	-94.44
Last 5	09:54:09	900.02	17.41	6.54	2421.84	2.72	13.91	0.36	-99.33
Last 5	09:59:09	1200.02	17.54	6.62	2414.51	2.67	13.91	0.35	-101.14
Last 5	10:04:09	1500.02	17.72	6.68	2408.17	2.80	13.91	0.31	-102.59
Last 5	10:09:09	1800.02	17.72	6.72	2395.64	2.54	13.91	0.31	-104.31
Variance 0			0.13	0.08	-7.33			-0.01	-1.81
Variance 1			0.18	0.06	-6.34			-0.04	-1.45
Variance 2			0.00	0.04	-12.53			0.00	-1.72

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-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

MW-21D

Grab

Product Name: Low-Flow System

Date: 2020-03-02 16:11:30

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
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 32.58 ft

Well Information:

Well ID MW-22
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 9.78 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.6412198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 133.44 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	15:49:33	4799.92	16.99	5.99	1282.70	2.87	20.90	1.48	107.69
Last 5	15:54:33	5099.92	17.00	5.98	1283.49	2.85	20.90	1.24	106.75
Last 5	15:59:33	5399.92	17.03	5.98	1283.52	2.79	20.90	1.07	106.32
Last 5	16:04:33	5699.92	17.02	5.97	1282.11	2.66	20.90	0.98	105.86
Last 5	16:09:33	5999.92	17.05	5.97	1281.08	2.81	20.90	0.90	104.66
Variance 0			0.02	-0.01	0.03			-0.17	-0.44
Variance 1			-0.01	-0.01	-1.41			-0.10	-0.46
Variance 2			0.03	-0.00	-1.03			-0.08	-1.20

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-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

MW-22

Grab

Product Name: Low-Flow System

Date: 2020-03-02 13:28:29

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 66 ft

Pump placement from TOC 57.82 ft

Well Information:

Well ID MW-23D
Well diameter 2 in
Well Total Depth 62.82 ft
Screen Length 10 ft
Depth to Water 12.39 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3845859 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:11:14	300.14	17.35	7.29	1511.05	2.56	12.50	0.36	-133.81
Last 5	13:16:14	600.02	17.56	7.14	1571.32	1.77	12.50	0.26	-124.59
Last 5	13:21:14	900.02	17.50	7.08	1598.05	1.56	12.50	0.23	-113.61
Last 5	13:26:14	1200.02	17.60	7.05	1601.63	1.22	12.50	0.21	-104.02
Last 5									
Variance 0			0.20	-0.15	60.27			-0.09	9.22
Variance 1			-0.05	-0.06	26.73			-0.03	10.98
Variance 2			0.10	-0.03	3.57			-0.02	9.59

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-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

MW-23D

Grab

Product Name: Low-Flow System

Date: 2020-03-25 15:53:22

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 20 ft

Pump placement from TOC 27 ft

Well Information:

Well ID HGWA-1
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 5.50 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5742685 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	15:36:15	300.05	16.64	6.94	909.49	15.70	6.60	0.43	18.74
Last 5	15:41:15	600.02	16.65	6.94	914.07	0.42	6.30	0.18	16.90
Last 5	15:46:15	900.02	17.12	6.94	903.54	0.78	6.15	0.18	17.40
Last 5	15:51:15	1200.02	17.28	6.95	890.79	0.87	5.91	0.18	18.21
Last 5									
Variance 0			0.01	-0.00	4.58			-0.25	-1.84
Variance 1			0.47	0.01	-10.52			-0.01	0.50
Variance 2			0.16	0.00	-12.75			0.00	0.80

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWA-1
Grab

Low-Flow Test Report:

Test Date / Time: 3/25/2020 3:59:10 PM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: HGWA-2 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18 ft Total Depth: 27.95 ft Initial Depth to Water: 4.49 ft	Pump Type: Bladder Tubing Type: Poly ethylene Pump Intake From TOC: 23 ft Estimated Total Volume Pumped: 7 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.05 ft	Instrument Used: SmartROLL MP Serial Number: 364452
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Test Notes:

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).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
3/25/2020 3:59 PM	00:00	5.48 pH	17.01 °C	219.18 µS/cm	0.61 mg/L		179.8 mV	4.49 ft	200.00 ml/min
3/25/2020 4:04 PM	05:00	5.48 pH	17.01 °C	221.17 µS/cm	0.30 mg/L	11.76 NTU	95.9 mV	4.54 ft	200.00 ml/min
3/25/2020 4:09 PM	10:00	5.41 pH	16.94 °C	213.88 µS/cm	0.19 mg/L	10.03 NTU	85.7 mV	4.54 ft	200.00 ml/min
3/25/2020 4:14 PM	15:00	5.39 pH	16.92 °C	212.43 µS/cm	0.16 mg/L	7.86 NTU	82.3 mV	4.54 ft	200.00 ml/min
3/25/2020 4:19 PM	20:00	5.37 pH	16.86 °C	209.59 µS/cm	0.14 mg/L	6.48 NTU	75.6 mV	4.54 ft	200.00 ml/min
3/25/2020 4:24 PM	25:00	5.36 pH	16.87 °C	207.91 µS/cm	0.13 mg/L	5.03 NTU	73.0 mV	4.54 ft	200.00 ml/min
3/25/2020 4:29 PM	30:00	5.36 pH	16.87 °C	207.69 µS/cm	0.12 mg/L	4.45 NTU	64.9 mV	4.54 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-2	Grab

Low-Flow Test Report:

Test Date / Time: 3/25/2020 2:59:21 PM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: HGWA-3 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 35 ft Total Depth: 44.87 ft Initial Depth to Water: 4.09 ft	Pump Type: Bladder Tubing Type: Poly ethylene Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 4 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0 ft	Instrument Used: SmarTROLL MP Serial Number: 364452
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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 6020B).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
3/25/2020 2:59 PM	00:00	7.39 pH	17.25 °C	507.85 µS/cm	0.92 mg/L		-50.1 mV	4.09 ft	200.00 ml/min
3/25/2020 3:04 PM	05:00	7.39 pH	17.10 °C	509.15 µS/cm	0.38 mg/L	2.05 NTU	-54.6 mV	4.09 ft	200.00 ml/min
3/25/2020 3:09 PM	10:00	7.40 pH	17.10 °C	508.82 µS/cm	0.22 mg/L	1.47 NTU	-62.9 mV	4.09 ft	200.00 ml/min
3/25/2020 3:14 PM	15:00	7.40 pH	17.11 °C	508.34 µS/cm	0.18 mg/L	1.39 NTU	-64.5 mV	4.09 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-3	Grab

Product Name: Low-Flow System

Date: 2020-03-26 10:59:27

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth 25.80 ft
Screen Length 10 ft
Depth to Water 3.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:45:10	300.03	16.02	5.59	69.62	2.03	4.15	2.16	118.14
Last 5	10:50:10	600.01	16.02	5.46	67.50	1.79	4.17	1.70	130.99
Last 5	10:55:10	900.02	16.02	5.43	68.03	1.76	4.17	1.58	136.18
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.00	-0.13	-2.12			-0.46	12.85
Variance 2			0.00	-0.04	0.53			-0.12	5.19

Notes

Battery died. Replacing battery and restarting purge.

Product Name: Low-Flow System

Date: 2020-03-26 12:49:27

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth 25.80 ft
Screen Length 10 ft
Depth to Water 3.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 22 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	12:28:45	3600.99	16.53	5.76	115.54	1.95	4.19	1.36	104.36
Last 5	12:33:45	3900.98	16.79	5.80	126.33	2.38	4.19	1.34	101.70
Last 5	12:38:45	4200.98	16.83	5.77	115.72	2.49	4.19	1.35	100.48
Last 5	12:43:45	4500.98	16.83	5.77	116.12	2.40	4.15	1.37	99.30
Last 5	12:48:45	4800.97	16.87	5.77	115.89	2.40	4.10	1.38	98.55
Variance 0			0.04	-0.03	-10.62			0.01	-1.22
Variance 1			0.00	0.00	0.40			0.02	-1.18
Variance 2			0.04	-0.00	-0.23			0.01	-0.75

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWA-4
Grab

Product Name: Low-Flow System

Date: 2020-03-26 09:18:50

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-5
Well diameter 2 in
Well Total Depth 27.95 ft
Screen Length 10 ft
Depth to Water 2.82 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 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	08:56:41	600.02	16.97	6.34	196.01	8.82	3.52	0.20	57.39
Last 5	09:01:42	900.04	17.03	6.34	204.74	5.91	3.52	0.16	47.09
Last 5	09:06:42	1200.03	17.05	6.36	209.19	4.03	3.65	0.15	41.96
Last 5	09:11:41	1500.01	17.09	6.37	213.16	3.22	3.67	0.13	38.43
Last 5	09:16:41	1800.00	17.18	6.38	218.24	3.31	3.71	0.12	35.71
Variance 0			0.03	0.02	4.45			-0.02	-5.14
Variance 1			0.04	0.01	3.97			-0.02	-3.53
Variance 2			0.09	0.01	5.08			-0.01	-2.72

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 6020B).

Grab Samples

HGWA-5
Grab

Product Name: Low-Flow System

Date: 2020-03-25 17:06:48

Project Information:

Operator Name Nelson Gunby
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-6
Well diameter 2 in
Well Total Depth 50.52 ft
Screen Length 10 ft
Depth to Water 2.30 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:45:06	2100.03	14.59	7.41	363.90	1.10	3.95	0.36	-48.17
Last 5	16:50:06	2400.03	14.48	7.40	364.16	0.71	3.97	0.33	-51.31
Last 5	16:55:06	2700.02	14.21	7.40	365.38	1.82	3.97	0.32	-55.08
Last 5	17:00:06	3000.03	14.32	7.39	364.73	0.98	3.95	0.30	-59.71
Last 5	17:05:06	3300.03	14.26	7.39	363.97	0.71	3.97	0.30	-63.02
Variance 0			-0.27	-0.00	1.21			-0.01	-3.77
Variance 1			0.11	-0.01	-0.64			-0.02	-4.63
Variance 2			-0.07	-0.01	-0.76			-0.01	-3.31

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWA-6
Grab

Product Name: Low-Flow System

Date: 2020-03-30 09:53:13

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-14
Well diameter 2 in
Well Total Depth 43 ft
Screen Length 10 ft
Depth to Water 23.35 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:31:35	1500.00	19.58	4.53	2913.45	0.76	23.40	0.54	219.02
Last 5	09:36:35	1800.00	19.68	4.55	2912.14	0.66	23.40	0.51	225.95
Last 5	09:41:35	2100.00	19.76	4.56	2910.85	0.67	23.40	0.50	217.48
Last 5	09:46:35	2400.00	19.72	4.56	2912.23	0.64	23.40	0.53	216.21
Last 5	09:51:35	2699.99	19.73	4.57	2912.97	0.55	23.40	0.54	214.88
Variance 0			0.07	0.01	-1.29			-0.01	-8.47
Variance 1			-0.03	0.00	1.38			0.03	-1.28
Variance 2			0.00	0.01	0.74			0.00	-1.32

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-14
Grab
FD-02
Grab

Product Name: Low-Flow System

Date: 2020-03-26 14:43:54

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-15
Well diameter 2 in
Well Total Depth 38 ft
Screen Length 10 ft
Depth to Water 7.86 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 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	14:22:20	600.02	18.70	6.14	1495.80	1.80	8.43	1.09	130.74
Last 5	14:27:20	900.02	18.72	6.10	1494.54	3.37	8.43	0.80	127.99
Last 5	14:32:20	1200.02	18.74	6.07	1494.04	3.94	8.43	0.61	125.83
Last 5	14:37:20	1500.01	18.66	6.05	1497.91	3.94	8.43	0.63	122.64
Last 5	14:42:20	1800.00	18.61	6.03	1494.40	3.05	8.43	0.59	119.62
Variance 0			0.03	-0.03	-0.50			-0.19	-2.16
Variance 1			-0.08	-0.02	3.88			0.02	-3.19
Variance 2			-0.05	-0.02	-3.51			-0.04	-3.02

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWC-15
Grab

Low-Flow Test Report:

Test Date / Time: 3/30/2020 9:50:18 AM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: HGWC-16 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 23 ft Total Depth: 33.1 ft Initial Depth to Water: 6.66 ft	Pump Type: Peristaltic Tubing Type: Poly ethylene Pump Intake From TOC: 28 ft Estimated Total Volume Pumped: 19.5 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.78 ft	Instrument Used: SmarTROLL MP Serial Number: 364452
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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 6020B).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
3/30/2020 9:50 AM	00:00	7.15 pH	17.94 °C	1,080.4 µS/cm	1.16 mg/L		-47.0 mV	6.66 ft	200.00 ml/min
3/30/2020 9:59 AM	08:48	7.13 pH	18.17 °C	1,072.5 µS/cm	0.23 mg/L	57.30 NTU	-75.7 mV	7.44 ft	200.00 ml/min
3/30/2020 10:02 AM	11:56	7.13 pH	18.35 °C	1,069.2 µS/cm	0.18 mg/L		-74.4 mV	7.44 ft	200.00 ml/min
3/30/2020 10:07 AM	16:56	7.12 pH	18.57 °C	1,067.2 µS/cm	0.15 mg/L	64.70 NTU	-72.6 mV	7.44 ft	200.00 ml/min
3/30/2020 10:12 AM	21:56	7.12 pH	18.21 °C	1,067.2 µS/cm	0.14 mg/L	55.20 NTU	-67.1 mV	7.44 ft	200.00 ml/min
3/30/2020 10:17 AM	26:56	7.12 pH	18.11 °C	1,069.0 µS/cm	0.14 mg/L	19.30 NTU	-70.1 mV	7.44 ft	200.00 ml/min
3/30/2020 10:22 AM	31:56	7.11 pH	18.70 °C	1,064.6 µS/cm	0.13 mg/L	23.60 NTU	-67.1 mV	7.44 ft	200.00 ml/min
3/30/2020 10:27 AM	36:56	7.11 pH	18.83 °C	1,064.8 µS/cm	0.11 mg/L	12.80 NTU	-65.3 mV	7.44 ft	200.00 ml/min
3/30/2020 10:32 AM	41:56	7.11 pH	18.60 °C	1,066.8 µS/cm	0.14 mg/L	22.90 NTU	-63.9 mV	7.44 ft	200.00 ml/min
3/30/2020 10:37 AM	46:56	7.10 pH	18.75 °C	1,066.6 µS/cm	0.12 mg/L	11.30 NTU	-63.1 mV	7.46 ft	200.00 ml/min
3/30/2020 10:42 AM	51:56	7.10 pH	18.70 °C	1,068.4 µS/cm	0.11 mg/L	12.30 NTU	-64.2 mV	7.48 ft	200.00 ml/min
3/30/2020 10:47 AM	56:56	7.10 pH	18.66 °C	1,069.0 µS/cm	0.11 mg/L	10.12 NTU	-62.5 mV	7.50 ft	200.00 ml/min
3/30/2020 10:52 AM	01:01:56	7.10 pH	18.47 °C	1,070.6 µS/cm	0.12 mg/L	8.38 NTU	-63.8 mV	7.51 ft	200.00 ml/min
3/30/2020 10:57 AM	01:07:16	7.10 pH	18.92 °C	1,068.2 µS/cm	0.10 mg/L	7.33 NTU	-66.5 mV	7.51 ft	200.00 ml/min

3/30/2020 11:02 AM	01:12:16	7.10 pH	19.12 °C	1,070.6 µS/cm	0.11 mg/L	6.59 NTU	-62.1 mV	7.51 ft	200.00 ml/min
3/30/2020 11:07 AM	01:17:16	7.09 pH	19.23 °C	1,069.5 µS/cm	0.11 mg/L	5.98 NTU	-62.5 mV	7.51 ft	200.00 ml/min
3/30/2020 11:12 AM	01:22:16	7.09 pH	19.19 °C	1,070.4 µS/cm	0.12 mg/L	5.43 NTU	-61.7 mV	7.51 ft	200.00 ml/min
3/30/2020 11:17 AM	01:27:16	7.09 pH	19.37 °C	1,072.2 µS/cm	0.11 mg/L	5.82 NTU	-60.4 mV	7.44 ft	200.00 ml/min
3/30/2020 11:22 AM	01:32:16	7.09 pH	19.41 °C	1,066.4 µS/cm	0.11 mg/L	4.11 NTU	-61.0 mV	7.44 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWC-16	Grab

Product Name: Low-Flow System

Date: 2020-03-31 09:00:56

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-17
Well diameter 2 in
Well Total Depth 27.8 ft
Screen Length 10 ft
Depth to Water 14.17 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 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	08:39:16	300.08	17.63	6.28	1863.52	2.86	14.65	0.20	91.73
Last 5	08:44:15	598.23	17.65	6.28	1860.25	1.39	14.65	0.14	75.74
Last 5	08:49:15	898.22	17.65	6.27	1862.58	1.23	14.65	0.12	68.15
Last 5	08:54:15	1198.21	17.63	6.28	1848.74	0.92	14.65	0.12	63.20
Last 5	08:59:15	1498.27	17.65	6.28	1847.92	0.74	14.67	0.11	59.58
Variance 0			-0.00	-0.00	2.33			-0.02	-7.58
Variance 1			-0.02	0.00	-13.83			-0.01	-4.95
Variance 2			0.02	-0.00	-0.83			-0.01	-3.62

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-17
Grab

Product Name: Low-Flow System

Date: 2020-03-31 13:15:32

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-18
Well diameter 2 in
Well Total Depth 27.8 ft
Screen Length 10 ft
Depth to Water 14.79 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 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	12:58:36	300.08	15.80	4.43	2190.45	0.25	14.96	0.75	207.66
Last 5	13:03:36	600.02	15.75	4.43	2207.06	0.25	14.99	0.67	203.50
Last 5	13:08:36	900.02	15.71	4.43	2212.08	0.07	14.99	0.64	201.55
Last 5	13:13:38	1202.03	15.75	4.43	2211.66	0.00	14.99	0.62	200.55
Last 5									
Variance 0			-0.05	-0.00	16.61			-0.08	-4.16
Variance 1			-0.04	-0.00	5.02			-0.03	-1.95
Variance 2			0.04	0.00	-0.42			-0.02	-1.00

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-18
Grab

Low-Flow Test Report:

Test Date / Time: 4/1/2020 11:14:00 AM

Project: Plant Hammond (3)

Operator Name: Aaron Reeder

Location Name: MW-21D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 41.8 ft Total Depth: 51.8 ft Initial Depth to Water: 14.84 ft	Pump Type: Alexis Peri Tubing Type: Poly Pump Intake From TOC: 46 ft Estimated Total Volume Pumped: 10000 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.39 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 6020B).

Weather Conditions:

Sunny and windy

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 %	+/- 5	+/- 10	+/- 5	
4/1/2020 11:14 AM	00:00	7.15 pH	17.91 °C	1,951.2 µS/cm	5.05 mg/L	5.64 NTU	-40.2 mV	14.84 ft	200.00 ml/min
4/1/2020 11:19 AM	05:00	7.01 pH	17.46 °C	2,189.9 µS/cm	1.50 mg/L	4.59 NTU	-76.2 mV	15.21 ft	200.00 ml/min
4/1/2020 11:24 AM	10:00	7.03 pH	17.46 °C	2,172.1 µS/cm	1.43 mg/L	2.88 NTU	-95.5 mV	15.22 ft	200.00 ml/min
4/1/2020 11:29 AM	15:00	6.93 pH	17.46 °C	2,201.5 µS/cm	1.62 mg/L	1.12 NTU	-118.1 mV	15.22 ft	200.00 ml/min
4/1/2020 11:34 AM	20:00	6.90 pH	17.67 °C	2,214.4 µS/cm	2.91 mg/L	1.05 NTU	-112.7 mV	15.22 ft	200.00 ml/min
4/1/2020 11:39 AM	25:00	6.90 pH	17.63 °C	2,191.7 µS/cm	0.94 mg/L	0.65 NTU	-111.2 mV	15.23 ft	200.00 ml/min
4/1/2020 11:44 AM	30:00	6.90 pH	17.54 °C	2,190.3 µS/cm	0.64 mg/L	0.59 NTU	-110.2 mV	15.23 ft	200.00 ml/min
4/1/2020 11:49 AM	35:00	6.90 pH	17.55 °C	2,184.5 µS/cm	0.55 mg/L	0.58 NTU	-80.3 mV	15.23 ft	200.00 ml/min
4/1/2020 11:54 AM	40:00	6.90 pH	17.63 °C	2,129.0 µS/cm	0.63 mg/L	0.34 NTU	-108.8 mV	15.23 ft	200.00 ml/min
4/1/2020 11:59 AM	45:00	6.90 pH	17.57 °C	2,085.5 µS/cm	0.71 mg/L	0.79 NTU	-108.8 mV	15.23 ft	200.00 ml/min

4/1/2020 12:04 PM	50:00	6.90 pH	17.64 °C	2,110.1 µS/cm	0.61 mg/L	0.60 NTU	-78.2 mV	15.23 ft	200.00 ml/min
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Samples

Sample ID:	Description:
MW-21D	Grab

Product Name: Low-Flow System

Date: 2020-03-27 15:11:58

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-22
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 5.55 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:01:40	300.09	18.61	5.74	1536.49	0.67	14.62	1.37	64.23
Last 5	15:06:40	600.05	18.74	5.74	1538.20	1.04	14.72	1.27	61.70
Last 5	15:11:40	900.02	18.73	5.74	1535.58	--	--	1.16	64.49
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.13	-0.00	1.71			-0.11	-2.52
Variance 2			-0.01	-0.00	-2.62			-0.10	2.79

Notes

iPad overheated. Restarting InSitu app.

Product Name: Low-Flow System

Date: 2020-03-27 16:05:19

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-22
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 5.55 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 17 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	15:44:20	1803.02	19.29	5.72	1530.06	0.68	14.95	0.66	60.19
Last 5	15:49:20	2103.02	19.37	5.71	1524.40	0.59	15.00	0.59	58.90
Last 5	15:54:21	2404.01	19.86	5.71	1517.33	0.38	14.98	0.54	56.80
Last 5	15:59:21	2704.02	19.81	5.71	1519.54	0.42	14.98	0.50	55.90
Last 5	16:04:21	3004.01	19.95	5.71	1515.67	0.60	14.98	0.49	55.89
Variance 0			0.49	0.00	-7.07			-0.05	-2.10
Variance 1			-0.04	0.00	2.21			-0.03	-0.90
Variance 2			0.13	-0.00	-3.87			-0.01	-0.01

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

MW-22
Grab

Low-Flow Test Report:

Test Date / Time: 4/1/2020 11:17:11 AM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: MW-23D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 53 ft Total Depth: 62.79 ft Initial Depth to Water: 13.64 ft	Pump Type: Peristaltic Tubing Type: Poly ethylene Pump Intake From TOC: 58 ft Estimated Total Volume Pumped: 4 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.12 ft	Instrument Used: SmarTROLL MP Serial Number: 364452
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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 6020B).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
4/1/2020 11:17 AM	00:00	6.86 pH	16.48 °C	1,601.1 µS/cm	0.93 mg/L		-0.9 mV	13.64 ft	200.00 ml/min
4/1/2020 11:22 AM	05:00	6.82 pH	16.95 °C	1,700.2 µS/cm	0.41 mg/L	1.68 NTU	-3.7 mV	13.76 ft	200.00 ml/min
4/1/2020 11:27 AM	10:00	6.81 pH	17.03 °C	1,727.4 µS/cm	0.29 mg/L	1.71 NTU	-2.8 mV	13.76 ft	200.00 ml/min
4/1/2020 11:32 AM	15:00	6.80 pH	17.19 °C	1,747.0 µS/cm	0.25 mg/L	1.56 NTU	3.1 mV	13.76 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-23D	Grab

Low-Flow Test Report:

Test Date / Time: 4/1/2020 9:31:20 AM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: MW-33 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 28 ft Total Depth: 37.93 ft Initial Depth to Water: 21.1 ft	Pump Type: Peristaltic Tubing Type: Poly ethylene Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 6 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.05 ft	Instrument Used: SmarTROLL MP Serial Number: 364452
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Test Notes:

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).

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	
4/1/2020 9:31 AM	00:00	4.33 pH	16.52 °C	2,802.3 µS/cm	0.46 mg/L		356.7 mV	21.10 ft	200.00 ml/min
4/1/2020 9:36 AM	05:00	4.35 pH	16.61 °C	2,787.5 µS/cm	0.47 mg/L	3.62 NTU	335.9 mV	21.15 ft	200.00 ml/min
4/1/2020 9:41 AM	10:00	4.35 pH	16.61 °C	2,794.5 µS/cm	0.46 mg/L	2.76 NTU	325.5 mV	21.13 ft	200.00 ml/min
4/1/2020 9:46 AM	15:00	4.35 pH	16.65 °C	2,788.1 µS/cm	0.86 mg/L	2.55 NTU	324.6 mV	21.13 ft	200.00 ml/min
4/1/2020 9:51 AM	20:00	4.34 pH	16.87 °C	2,786.2 µS/cm	0.79 mg/L	2.20 NTU	316.5 mV	21.15 ft	200.00 ml/min
4/1/2020 9:56 AM	25:00	4.35 pH	16.70 °C	2,774.6 µS/cm	0.70 mg/L	2.15 NTU	313.5 mV	21.15 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-33	Grab

Product Name: Low-Flow System

Date: 2020-06-17 09:29:33

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-21D
Well diameter 2 in
Well Total Depth 52.29 ft
Screen Length 10 ft
Depth to Water 17.58 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 9.5 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	09:06:33	1200.52	18.52	6.32	2436.48	12.50	17.82	0.14	-2.77
Last 5	09:11:33	1500.52	18.52	6.37	2440.27	8.03	17.82	0.13	-15.33
Last 5	09:16:33	1800.52	18.52	6.40	2440.91	6.06	17.82	0.12	-23.63
Last 5	09:21:33	2100.52	18.55	6.44	2439.17	5.18	17.82	0.11	-28.15
Last 5	09:26:33	2400.45	18.64	6.47	2439.31	4.95	17.82	0.10	-31.58
Variance 0			-0.01	0.04	0.64			-0.01	-8.30
Variance 1			0.03	0.03	-1.74			-0.01	-4.52
Variance 2			0.09	0.03	0.13			-0.01	-3.44

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-21D
Grab

Product Name: Low-Flow System

Date: 2020-06-17 17:12:35

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35 ft

Pump placement from TOC 35 ft

Well Information:

Well ID MW-33
Well diameter 2 in
Well Total Depth 38.61 ft
Screen Length 10 ft
Depth to Water 24.87 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2462198 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	16:08:43	900.02	21.02	4.44	2734.47	21.60	24.92	0.36	206.08
Last 5	16:13:43	1200.02	20.96	4.40	2740.18	12.40	24.92	0.31	215.18
Last 5	16:18:43	1500.02	20.93	4.39	2745.83	8.04	24.92	0.28	220.76
Last 5	16:23:43	1800.02	20.93	4.36	2742.62	8.77	24.92	0.29	226.35
Last 5	16:28:43	2100.02	20.87	4.36	2743.00	4.64	24.92	0.29	224.71
Variance 0			-0.03	-0.02	5.65			-0.03	5.58
Variance 1			-0.00	-0.03	-3.21			0.01	5.59
Variance 2			-0.06	0.00	0.37			-0.00	-1.64

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-33
Grab

Product Name: Low-Flow System

Date: 2020-06-18 18:02:07

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-34D
Well diameter 2 in
Well Total Depth 73 ft
Screen Length 10 ft
Depth to Water 29.8 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 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	17:39:40	9015.69	21.82	6.95	2835.74	10.75	30.00	0.02	151.88
Last 5	17:44:40	9315.66	21.60	6.95	2845.46	10.65	30.00	0.02	152.60
Last 5	17:49:40	9615.66	21.79	6.95	2838.53	10.00	30.00	0.02	152.61
Last 5	17:54:40	9915.66	21.79	6.95	2836.10	9.28	30.00	0.02	152.44
Last 5	17:59:40	10215.63	21.71	6.95	2830.14	8.88	30.00	0.02	151.43
Variance 0			0.19	-0.00	-6.93			0.00	0.02
Variance 1			0.00	0.00	-2.43			-0.00	-0.17
Variance 2			-0.08	0.00	-5.96			-0.00	-1.01

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-34D
Grab

Product Name: Low-Flow System

Date: 2020-06-18 12:33:34

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 18 ft

Pump placement from TOC 18 ft

Well Information:

Well ID MW-35
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 8.38 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1703416 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:26:48	900.02	19.59	5.65	2562.04	6.66	9.89	2.29	144.93
Last 5	11:31:48	1200.03	19.68	5.63	2575.96	5.85	9.83	1.49	130.09
Last 5	11:36:48	1500.02	19.28	5.52	2618.03	5.70	10.01	0.83	87.49
Last 5	11:41:48	1800.02	19.51	5.48	2633.95	3.35	10.00	0.83	80.71
Last 5	11:46:48	2100.02	19.58	5.46	2636.86	1.97	9.94	0.63	76.75
Variance 0			-0.40	-0.10	42.07			-0.66	-42.60
Variance 1			0.22	-0.04	15.92			-0.00	-6.78
Variance 2			0.07	-0.02	2.91			-0.20	-3.96

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D). Total depth: 24.33'

Grab Samples

MW-35
Grab

Product Name: Low-Flow System

Date: 2020-06-18 10:04:01

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-36D
Well diameter 2 in
Well Total Depth 59.19 ft
Screen Length 10 ft
Depth to Water 17.26 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:42:01	2100.95	19.82	7.47	378.42	8.98	18.88	0.09	44.37
Last 5	09:47:01	2400.95	19.90	7.40	392.25	7.28	18.88	0.09	20.58
Last 5	09:52:01	2700.95	19.99	7.37	392.45	6.75	18.88	0.07	27.57
Last 5	09:57:01	3000.95	20.10	7.36	392.18	6.48	18.88	0.07	48.57
Last 5	10:02:01	3300.95	20.13	7.35	392.53	4.52	18.88	0.06	77.12
Variance 0			0.08	-0.03	0.20			-0.02	6.99
Variance 1			0.11	-0.01	-0.27			-0.01	20.99
Variance 2			0.03	-0.00	0.35			-0.00	28.55

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-36D
Grab

Product Name: Low-Flow System

Date: 2020-06-17 10:56:27

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-37D
Well diameter 2 in
Well Total Depth 78.50 ft
Screen Length 10 ft
Depth to Water 17.8 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 40 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	10:34:26	900.36	19.50	7.37	1205.85	4.51	23.33	0.13	-58.08
Last 5	10:39:26	1200.36	19.39	7.40	1206.24	3.20	23.91	0.15	-59.16
Last 5	10:44:26	1500.36	19.19	7.42	1209.18	4.16	24.55	0.15	-59.97
Last 5	10:49:26	1800.36	19.28	7.43	1208.76	4.26	25.14	0.14	-60.38
Last 5	10:54:26	2100.36	19.82	7.44	1206.88	--	--	0.13	-62.24
Variance 0			-0.20	0.02	2.94			0.00	-0.81
Variance 1			0.09	0.01	-0.43			-0.00	-0.41
Variance 2			0.53	0.01	-1.88			-0.01	-1.86

Notes

Drawdown is 0.6 ft per minute. Initiating well evacuation, will sample tomorrow.

Product Name: Low-Flow System

Date: 2020-06-18 13:34:48

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-37D
Well diameter 2 in
Well Total Depth 78.5 ft
Screen Length 10 ft
Depth to Water 18.26 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 20 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:14:14	300.03	19.97	7.78	1314.90	44.50	43.80	13.37	166.43
Last 5									
Last 5									
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.00	0.00	0.00			0.00	0.00
Variance 2			0.00	0.00	0.00			0.00	0.00

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-37D
Grab
MW-37D
Grab, filtered

Product Name: Low-Flow System

Date: 2020-09-15 14:00:40

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 29 ft

Pump placement from TOC 28 ft

Well Information:

Well ID HGWA-1
Well diameter 2 in
Well Total Depth 32.30 ft
Screen Length 10 ft
Depth to Water 21.03 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6144392 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	13:35:42	1200.02	18.57	7.12	675.09	6.15	21.66	0.73	46.26
Last 5	13:40:42	1500.02	18.61	7.14	640.84	3.75	21.68	0.74	45.86
Last 5	13:45:42	1800.02	18.61	7.13	636.90	2.72	21.68	0.75	45.56
Last 5	13:50:42	2100.02	18.59	7.13	642.42	1.99	21.68	0.84	43.99
Last 5	13:55:42	2400.02	18.57	7.15	637.79	2.15	21.70	0.74	42.92
Variance 0			-0.00	-0.01	-3.93			0.01	-0.30
Variance 1			-0.02	0.00	5.52			0.09	-1.57
Variance 2			-0.02	0.02	-4.63			-0.10	-1.07

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWA-1
Grab

Product Name: Low-Flow System

Date: 2020-09-15 11:00:31

Project Information:

Operator Name Vashish Taukooor
Company Name Geosyntec Consultants
Project Name GP-Plant Hammon
Site Name d 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 24 ft

Pump placement from TOC 23 ft

Well Information:

Well ID HGWA-2
Well diameter 2 in
Well Total Depth 28.44 ft
Screen Length 10 ft
Depth to Water 11.30 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5921222 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	10:32:10	899.92	20.15	5.32	195.68	11.60	11.41	0.42	169.65
Last 5	10:37:10	1199.92	20.13	5.28	194.22	8.02	11.42	0.41	173.23
Last 5	10:42:10	1499.91	20.17	5.24	193.95	5.33	11.42	0.40	175.76
Last 5	10:47:10	1799.91	20.12	5.24	192.89	5.42	11.42	0.36	175.10
Last 5	10:52:10	2099.88	20.26	5.22	193.35	3.45	11.42	0.30	177.98
Variance 0			0.05	-0.04	-0.27			-0.01	2.53
Variance 1			-0.05	-0.00	-1.06			-0.04	-0.65
Variance 2			0.14	-0.02	0.45			-0.05	2.88

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWA-2
Grab

Product Name: Low-Flow System

Date: 2020-09-15 11:44:46

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 41 ft

Pump placement from TOC 40 ft

Well Information:

Well ID HGWA-3
Well diameter 2 in
Well Total Depth 45.21 ft
Screen Length 10 ft
Depth to Water 11.14 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 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	11:20:49	599.92	19.75	7.20	432.07	2.79	11.14	0.43	135.56
Last 5	11:25:49	899.91	19.67	7.25	431.63	2.66	11.14	0.32	128.09
Last 5	11:30:49	1199.91	19.68	7.26	431.82	1.91	11.14	0.26	123.92
Last 5	11:35:49	1499.90	19.64	7.28	432.89	1.45	11.15	0.22	118.72
Last 5	11:40:49	1799.89	19.73	7.29	433.82	1.39	11.15	0.19	117.44
Variance 0			0.01	0.02	0.19			-0.06	-4.18
Variance 1			-0.04	0.02	1.07			-0.04	-5.20
Variance 2			0.09	0.00	0.93			-0.03	-1.29

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWA-3

Grab

Product Name: Low-Flow System

Date: 2020-09-15 14:34:03

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 30 ft

Pump placement from TOC 19.81 ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth 24.81 ft
Screen Length 10 ft
Depth to Water 11.24 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6189027 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	14:12:54	900.01	21.23	5.69	125.61	3.13	11.39	1.39	98.72
Last 5	14:17:54	1200.01	21.24	5.70	129.39	2.70	11.40	1.35	99.03
Last 5	14:22:54	1500.01	21.24	5.72	133.29	2.28	11.39	1.35	98.55
Last 5	14:27:54	1800.00	21.28	5.74	136.83	1.87	11.39	1.33	97.63
Last 5	14:32:54	2100.00	21.29	5.75	135.39	1.60	11.39	1.37	97.01
Variance 0			0.00	0.02	3.90			0.00	-0.48
Variance 1			0.04	0.02	3.54			-0.02	-0.92
Variance 2			0.01	0.01	-1.43			0.03	-0.62

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWA-4

Grab

Product Name: Low-Flow System

Date: 2020-09-15 10:59:29

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 23 ft

Pump placement from TOC 22 ft

Well Information:

Well ID HGWA-5
Well diameter 2 in
Well Total Depth 27.56 ft
Screen Length 10 ft
Depth to Water 7.40 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.58766 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	10:36:23	899.98	19.86	6.25	233.64	3.74	7.95	0.52	30.30
Last 5	10:41:23	1199.98	19.84	6.28	233.81	3.91	7.95	0.60	28.77
Last 5	10:46:23	1499.98	19.77	6.32	237.72	3.31	7.95	0.58	26.31
Last 5	10:51:23	1799.98	19.78	6.32	233.67	2.74	7.95	0.48	26.67
Last 5	10:56:23	2099.98	19.73	6.33	234.42	3.02	7.95	0.43	27.29
Variance 0			-0.07	0.03	3.91			-0.01	-2.46
Variance 1			0.00	0.01	-4.05			-0.10	0.36
Variance 2			-0.05	0.01	0.75			-0.05	0.62

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWA-5

Grab

Product Name: Low-Flow System

Date: 2020-09-15 12:39:50

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 46 ft

Pump placement from TOC 45 ft

Well Information:

Well ID HGWA-6
Well diameter 2 in
Well Total Depth 50.40 ft
Screen Length 10 ft
Depth to Water 7.44 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.69032 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	12:17:58	1500.00	18.97	7.37	380.02	1.13	8.65	0.39	-20.47
Last 5	12:22:58	1800.00	18.97	7.37	378.11	0.87	8.65	0.50	-24.21
Last 5	12:27:58	2100.00	18.97	7.37	375.36	1.15	8.65	0.38	-27.06
Last 5	12:32:58	2399.99	18.93	7.37	373.28	0.91	8.65	0.44	-30.91
Last 5	12:37:58	2699.99	18.88	7.37	374.79	1.03	8.65	0.29	-34.76
Variance 0			-0.00	0.00	-2.75			-0.12	-2.85
Variance 1			-0.04	0.00	-2.08			0.06	-3.85
Variance 2			-0.05	-0.00	1.51			-0.15	-3.84

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWA-6

Grab

Product Name: Low-Flow System

Date: 2020-09-17 13:41:15

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 63 ft

Pump placement from TOC 62 ft

Well Information:

Well ID HGWA-42D
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.45 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.7661957 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	13:19:24	600.01	22.09	7.66	323.78	8.29	14.39	0.33	59.34
Last 5	13:24:24	900.00	21.78	7.65	323.16	6.42	14.90	0.25	59.52
Last 5	13:29:24	1199.99	21.69	7.62	323.00	5.70	15.01	0.21	58.01
Last 5	13:34:24	1499.99	21.46	7.62	323.75	5.11	15.16	0.18	56.80
Last 5	13:39:24	1799.98	21.33	7.62	323.50	4.96	15.30	0.16	54.56
Variance 0			-0.09	-0.02	-0.16			-0.05	-1.51
Variance 1			-0.22	-0.00	0.75			-0.03	-1.21
Variance 2			-0.13	0.00	-0.25			-0.02	-2.24

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWA-42D

Grab

Product Name: Low-Flow System

Date: 2020-09-16 12:15:59

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 58 ft

Pump placement from TOC 57 ft

Well Information:

Well ID HGWA-43D
Well diameter 2 in
Well Total Depth 62.80 ft
Screen Length 10 ft
Depth to Water 20.86 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.3488785 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:53:12	5399.89	19.50	7.52	489.14	2.49	28.90	3.50	123.71
Last 5	11:58:12	5699.88	19.55	7.52	489.23	3.04	29.04	3.51	124.17
Last 5	12:03:12	5999.87	19.55	7.51	489.18	1.70	29.23	3.51	125.27
Last 5	12:08:12	6299.85	19.59	7.51	490.42	4.39	29.34	3.52	127.61
Last 5	12:13:12	6599.86	19.59	7.52	490.47	2.00	29.44	3.55	126.16
Variance 0			0.00	-0.00	-0.05			0.00	1.09
Variance 1			0.04	-0.00	1.24			0.00	2.34
Variance 2			-0.00	0.00	0.05			0.04	-1.45

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWA-43D

Grab

Product Name: Low-Flow System

Date: 2020-09-16 15:15:05

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 109 ft

Pump placement from TOC 108 ft

Well Information:

Well ID HGWA-44D
Well diameter 2 in
Well Total Depth 112.70 ft
Screen Length 10 ft
Depth to Water 19.78 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.9715132 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	14:52:53	1799.98	18.75	7.82	485.06	7.32	22.23	0.33	82.08
Last 5	14:57:53	2099.97	18.75	7.83	484.75	6.23	22.41	0.31	80.84
Last 5	15:02:53	2399.96	19.01	7.84	485.74	6.11	22.33	0.30	79.80
Last 5	15:07:53	2699.96	19.13	7.84	485.10	4.90	22.25	0.31	80.08
Last 5	15:12:53	2999.95	19.10	7.83	484.70	4.93	22.23	0.31	77.43
Variance 0			0.26	0.01	0.99			-0.01	-1.04
Variance 1			0.12	0.00	-0.64			0.01	0.28
Variance 2			-0.02	-0.01	-0.40			0.00	-2.65

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWA-44D

Grab

Product Name: Low-Flow System

Date: 2020-09-18 09:19:54

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 40 ft

Pump placement from TOC 38 ft

Well Information:

Well ID HGWC-14
Well diameter 2 in
Well Total Depth 43.15 ft
Screen Length 10 ft
Depth to Water 28.35 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6635402 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	08:56:15	900.03	20.75	4.85	2900.03	1.49	28.96	0.21	195.15
Last 5	09:01:15	1200.03	20.73	4.85	2893.07	0.90	28.94	0.19	193.75
Last 5	09:06:15	1500.02	20.79	4.86	2896.24	0.87	28.94	0.18	193.42
Last 5	09:11:15	1800.06	20.85	4.88	2894.34	0.54	28.94	0.17	192.76
Last 5	09:16:15	2100.05	20.87	4.88	2895.01	0.49	28.94	0.17	194.38
Variance 0			0.06	0.00	3.17			-0.01	-0.34
Variance 1			0.06	0.02	-1.90			-0.01	-0.66
Variance 2			0.02	0.00	0.67			-0.00	1.62

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWC-14

Grab

Product Name: Low-Flow System

Date: 2020-09-17 14:20:02

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 40 ft

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-15
Well diameter 2 in
Well Total Depth 38.15ft
Screen Length 10 ft
Depth to Water 17.14 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 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:55:56	1500.02	19.97	6.17	1356.61	0.88	17.90	0.16	267.28
Last 5	14:00:56	1800.02	20.14	6.16	1346.80	0.82	17.90	0.17	245.67
Last 5	14:05:56	2100.02	20.39	6.12	1336.93	0.74	17.70	0.17	230.87
Last 5	14:10:56	2400.02	20.20	6.11	1333.62	0.54	17.90	0.18	238.94
Last 5	14:15:56	2700.02	20.04	6.11	1323.50	0.91	17.90	0.18	246.48
Variance 0			0.25	-0.03	-9.87			0.01	-14.79
Variance 1			-0.19	-0.01	-3.31			0.00	8.07
Variance 2			-0.17	-0.00	-10.12			0.01	7.54

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWC-15

Grab

Product Name: Low-Flow System

Date: 2020-09-17 11:51:35

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 34 ft

Pump placement from TOC 28 ft

Well Information:

Well ID HGWC-16
Well diameter 2 in
Well Total Depth 33.45 ft
Screen Length 10 ft
Depth to Water 12.54 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 33 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	11:24:12	8401.00	21.21	7.11	1128.52	6.31	13.10	0.20	-10.55
Last 5	11:29:12	8701.00	21.22	7.11	1125.55	6.36	13.10	0.22	-11.57
Last 5	11:34:12	9000.99	20.93	7.11	1129.71	5.88	13.09	0.20	-11.51
Last 5	11:44:12	9600.99	20.88	7.11	1132.35	5.73	13.09	0.22	-13.28
Last 5	11:49:12	9900.99	21.06	7.11	1131.78	5.03	13.09	0.22	-14.80
Variance 0			-0.30	-0.00	4.16			-0.03	0.06
Variance 1			-0.04	0.00	2.64			0.02	-1.77
Variance 2			0.18	-0.00	-0.56			0.00	-1.53

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWC-16

Grab

Product Name: Low-Flow System

Date: 2020-09-16 17:38:06

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 30 ft

Pump placement from TOC 23 ft

Well Information:

Well ID HGWC-17
Well diameter 2 in
Well Total Depth 27.90 ft
Screen Length 10 ft
Depth to Water 18.65 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6189027 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 16 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	17:09:21	3901.05	19.86	6.35	1664.95	--	--	0.36	116.63
Last 5	17:14:21	4201.04	19.85	6.36	1669.83	4.20	18.72	0.34	115.68
Last 5	17:19:21	4501.01	19.83	6.35	1671.11	4.00	18.72	0.32	114.73
Last 5	17:24:21	4801.01	19.82	6.35	1670.24	--	--	0.32	114.97
Last 5	17:29:21	5101.01	19.92	6.35	1661.45	--	--	0.22	113.38
Variance 0			-0.02	-0.01	1.28			-0.02	-0.95
Variance 1			-0.01	0.00	-0.87			0.01	0.24
Variance 2			0.10	0.00	-8.78			-0.10	-1.59

Notes

SmarTroll was not stopped in time before sampling, last reading at 17:19. 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-17

Grab

Product Name: Low-Flow System

Date: 2020-09-15 16:16:22

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 17 ft

Pump placement from TOC 17 ft

Well Information:

Well ID HGWC-18
Well diameter 2 in
Well Total Depth 27.72 ft
Screen Length 10 ft
Depth to Water 18.69 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5608841 L
Calculated Sample Rate 300 sec 3.6
Stabilization Drawdown 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	15:55:08	900.01	21.55	4.45	2272.14	9.85	18.91	0.32	171.95
Last 5	16:00:08	1200.01	21.44	4.46	2275.18	5.72	18.91	0.27	169.94
Last 5	16:05:08	1500.01	21.38	4.46	2265.96	3.80	18.91	0.26	165.35
Last 5	16:10:08	1800.01	21.33	4.47	2264.75	3.72	18.91	0.26	163.45
Last 5	16:15:08	2100.01	21.33	4.47	2262.93	2.20	18.91	0.24	170.98
Variance 0			-0.07	0.01	-9.22			-0.01	-4.59
Variance 1			-0.05	0.01	-1.20			-0.00	-1.90
Variance 2			-0.00	-0.00	-1.82			-0.01	7.53

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

HGWC-18
Grab

Product Name: Low-Flow System

Date: 2020-09-21 10:22:55

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 Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 49 ft

Pump placement from TOC 47 ft

Well Information:

Well ID MW-21D
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 17.79 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3087077 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	10:00:07	600.03	18.97	6.92	2431.44	1.50	18.70	0.37	-74.61
Last 5	10:05:07	900.02	18.99	6.92	2440.47	1.00	18.70	0.35	-73.68
Last 5	10:10:07	1200.02	19.14	6.92	2460.38	0.66	18.70	0.35	-74.07
Last 5	10:15:07	1500.02	19.15	6.92	2457.69	0.69	18.70	0.32	-74.11
Last 5	10:20:07	1800.02	19.17	6.92	2449.24	0.80	18.80	0.33	-74.32
Variance 0			0.15	0.00	19.91			-0.00	-0.39
Variance 1			0.01	-0.00	-2.69			-0.02	-0.04
Variance 2			0.03	0.00	-8.45			0.01	-0.21

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-21D
Grab

Product Name: Low-Flow System

Date: 2020-09-17 16:59:12

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 31 ft

Pump placement from TOC 30 ft

Well Information:

Well ID MW-22
Well diameter 2 in
Well Total Depth 35.15 ft
Screen Length 10 ft
Depth to Water 15.48 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6233705 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	16:37:55	2400.02	20.40	5.62	1457.42	1.01	19.88	0.54	280.81
Last 5	16:42:55	2700.02	20.89	5.62	1466.52	0.62	20.15	0.39	256.59
Last 5	16:47:55	3000.02	21.15	5.63	1461.21	0.94	20.23	0.38	244.78
Last 5	16:52:55	3300.01	21.39	5.64	1458.90	0.70	20.25	0.38	234.19
Last 5	16:57:55	3600.01	21.19	5.66	1462.53	0.86	20.30	0.38	223.68
Variance 0			0.26	0.01	-5.30			-0.01	-11.80
Variance 1			0.24	0.01	-2.31			0.01	-10.60
Variance 2			-0.20	0.02	3.63			0.00	-10.50

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-22
Grab

Product Name: Low-Flow System

Date: 2020-09-17 17:15:06

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 59 ft

Pump placement from TOC 58 ft

Well Information:

Well ID MW-23D
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 16.98 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.7483419 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 20 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:53:14	4499.91	20.16	6.71	1760.44	6.76	17.15	0.10	68.00
Last 5	16:58:14	4799.90	20.26	6.71	1758.66	6.67	17.15	0.09	69.35
Last 5	17:03:14	5099.89	20.13	6.72	1758.57	6.06	17.15	0.09	70.69
Last 5	17:08:14	5399.89	20.05	6.72	1761.33	5.77	17.17	0.09	71.55
Last 5	17:13:14	5699.88	20.04	6.71	1761.88	4.97	17.15	0.08	72.14
Variance 0			-0.13	0.00	-0.09			-0.00	1.33
Variance 1			-0.08	0.00	2.76			-0.01	0.86
Variance 2			-0.01	-0.00	0.55			-0.00	0.59

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-23D
Grab

Product Name: Low-Flow System

Date: 2020-09-21 13:03:25

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 37 ft

Pump placement from TOC 33 ft

Well Information:

Well ID MW-33
Well diameter 2 in
Well Total Depth 38.30 ft
Screen Length 10 ft
Depth to Water 26.10 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2551467 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 15.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:40:01	2700.01	20.57	4.48	2894.84	2.46	26.19	0.23	210.38
Last 5	12:45:01	3000.01	20.48	4.48	2891.59	0.85	26.19	0.22	205.81
Last 5	12:50:01	3300.00	20.44	4.48	2893.33	0.89	26.19	0.24	203.69
Last 5	12:55:01	3600.00	20.53	4.48	2889.69	1.08	26.19	0.24	203.37
Last 5	13:00:01	3900.00	20.66	4.48	2889.82	0.82	26.19	0.23	202.81
Variance 0			-0.04	-0.00	1.75			0.02	-2.12
Variance 1			0.08	0.00	-3.64			0.00	-0.32
Variance 2			0.13	-0.00	0.13			-0.01	-0.57

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-33
Grab

Product Name: Low-Flow System

Date: 2020-09-23 16:28:29

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 71 ft

Pump placement from TOC 69 ft

Well Information:

Well ID MW-34D
Well diameter 2 in
Well Total Depth 74.05 ft
Screen Length 10 ft
Depth to Water 30.96 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.8019031 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 22.5 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	16:05:05	8702.04	21.05	7.05	2816.40	46.20	31.25	0.38	193.78
Last 5	16:10:05	9002.04	21.02	7.05	2817.52	45.50	31.25	0.38	187.94
Last 5	16:15:05	9302.05	20.99	7.05	2811.41	44.00	31.22	0.39	179.75
Last 5	16:20:05	9602.04	21.02	7.04	2807.63	47.00	31.22	0.38	176.31
Last 5	16:25:05	9902.05	21.02	7.05	2807.79	42.50	31.22	0.38	173.81
Variance 0			-0.03	-0.00	-6.11			0.01	-8.20
Variance 1			0.03	-0.00	-3.78			-0.01	-3.44
Variance 2			0.00	0.00	0.16			0.00	-2.49

Notes

STARTED AT 150 ML/MIN, THEN INCREASED TO 200 ML/MIN. TURBIDITY ABOVE 10 NTU AFTER 3 HOURS. 2 SAMPLES TAKEN: UNFILTERED AND FILTERED. Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-34D and MW-34D FILTERED

Grab

Product Name: Low-Flow System

Date: 2020-09-21 12:54:59

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 646773
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 23 ft

Pump placement from TOC 18 ft

Well Information:

Well ID MW-35
Well diameter 2 in
Well Total Depth 24.32 ft
Screen Length 10 ft
Depth to Water 9.84 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.5876587 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	12:33:24	2100.00	20.50	5.47	2735.96	8.28	10.79	1.44	66.07
Last 5	12:38:24	2400.00	20.48	5.44	2747.79	7.12	10.75	1.41	67.46
Last 5	12:43:24	2700.00	20.45	5.43	2742.64	4.17	10.75	1.58	67.38
Last 5	12:48:24	2999.99	20.51	5.41	2761.25	4.25	10.75	1.59	65.69
Last 5	12:53:24	3299.98	20.53	5.40	2748.89	4.34	10.72	1.61	65.52
Variance 0			-0.03	-0.01	-5.15			0.17	-0.08
Variance 1			0.06	-0.02	18.61			0.02	-1.69
Variance 2			0.01	-0.01	-12.37			0.02	-0.17

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-35
Grab

Product Name: Low-Flow System

Date: 2020-09-23 11:12:02

Project Information:

Operator Name Vashish W
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 54 ft

Pump placement from TOC 51 ft

Well Information:

Well ID MW-36D
Well diameter 2 in
Well Total Depth 58.60 ft
Screen Length 10 ft
Depth to Water 17.32 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.7260249 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	10:45:27	300.06	19.38	7.61	405.89	7.47	19.32	0.21	-63.26
Last 5	10:50:27	600.03	19.46	7.61	404.61	7.07	19.40	0.20	-32.77
Last 5	10:55:27	900.03	19.51	7.61	404.05	5.27	19.47	0.18	87.32
Last 5	11:05:27	1500.03	19.54	7.62	403.58	4.80	19.54	0.19	481.74
Last 5	11:10:27	1800.03	19.55	7.62	402.55	4.37	19.55	0.20	597.26
Variance 0			0.05	0.00	-0.56			-0.01	120.09
Variance 1			0.04	0.00	-0.47			0.00	394.42
Variance 2			0.00	0.00	-1.02			0.01	115.52

Notes

Seven bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); one 250-mL plastic bottle with HNO₃ for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-36D
Grab

Product Name: Low-Flow System

Date: 2020-09-22 16:31:02

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 75 ft

Pump placement from TOC 71 ft

Well Information:

Well ID MW-37D
Well diameter 2 in
Well Total Depth 77.80 ft
Screen Length 10 ft
Depth to Water 17.45 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.8197567 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	16:06:20	4500.00	21.73	7.47	1253.85	2.63	28.93	0.22	200.07
Last 5	16:11:20	4800.00	21.93	7.47	1253.46	2.78	29.20	0.18	278.93
Last 5	16:16:20	5099.99	22.20	7.47	1249.28	3.37	29.41	0.18	288.64
Last 5	16:21:20	5400.00	22.09	7.47	1250.40	--	--	0.16	266.22
Last 5	16:26:20	5699.99	20.08	7.50	1240.88	--	--	0.28	311.38
Variance 0			0.26	0.00	-4.17			0.01	9.71
Variance 1			-0.11	0.00	1.11			-0.02	-22.43
Variance 2			-2.01	0.03	-9.52			0.12	45.16

Notes

MW-37D: Dedicated Bladder. Stopped readings to purge dry. No sample taken, will sample tomorrow. Did not stop SmarTroll in time before purging dry, last reading at 16:16.

Grab Samples

Product Name: Low-Flow System

Date: 2020-09-23 08:54:18

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 73 ft

Pump placement from TOC 71 ft

Well Information:

Well ID MW-37D
Well diameter 2 in
Well Total Depth 77.80 ft
Screen Length 10 ft
Depth to Water 16.8 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.8108299 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	08:44:34	300.11	18.63	7.60	1286.45	2.78	20.50	0.52	-123.40
Last 5	08:49:34	600.03	18.57	7.62	1283.53	1.83	22.28	0.32	-123.75
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.06	0.02	-2.92			-0.20	-0.35
Variance 2			0.00	0.00	0.00			0.00	0.00

Notes

PURGED DRY ON 9-22-2020. Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for metals (EPA 6010D/6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-37D
Grab

Low-Flow Test Report:

Test Date / Time: 11/11/2020 2:20:05 PM

Project: GP-Plant Hammond

Operator Name: Shawn Lin

Location Name: HGWA-42D Well Diameter: 2 ft Screen Length: 10 ft Top of Screen: 58.03 ft Total Depth: 68.03 ft Initial Depth to Water: 11.71 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 63.03 m Estimated Total Volume Pumped: 15 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 2.87 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728634
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Test Notes:

Background:

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 = 68.03 ft.

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 2:20 PM	00:00	7.66 pH	21.05 °C	284.10 µS/cm	0.32 mg/L	9.42 NTU	-75.0 mV	13.38 ft	200.00 ml/min
11/11/2020 2:25 PM	05:00	7.67 pH	21.14 °C	284.51 µS/cm	0.26 mg/L	7.06 NTU	-64.4 mV	13.75 ft	200.00 ml/min
11/11/2020 2:30 PM	10:00	7.68 pH	21.20 °C	285.47 µS/cm	0.26 mg/L	6.14 NTU	-67.5 mV	13.94 ft	200.00 ml/min
11/11/2020 2:35 PM	15:00	7.68 pH	21.01 °C	285.59 µS/cm	0.50 mg/L	5.08 NTU	-119.6 mV	14.11 ft	200.00 ml/min
11/11/2020 2:40 PM	20:00	7.68 pH	20.73 °C	288.40 µS/cm	0.94 mg/L	4.46 NTU	-113.4 mV	14.22 ft	200.00 ml/min
11/11/2020 2:45 PM	25:00	7.68 pH	20.60 °C	290.10 µS/cm	1.24 mg/L	4.98 NTU	-108.5 mV	14.36 ft	200.00 ml/min
11/11/2020 2:50 PM	30:00	7.68 pH	20.54 °C	291.18 µS/cm	1.49 mg/L	4.09 NTU	-53.8 mV	14.39 ft	200.00 ml/min
11/11/2020 2:55 PM	35:00	7.69 pH	20.47 °C	291.05 µS/cm	1.70 mg/L	4.08 NTU	-99.3 mV	14.45 ft	200.00 ml/min
11/11/2020 3:00 PM	40:00	7.69 pH	20.40 °C	292.26 µS/cm	1.80 mg/L	4.18 NTU	-50.6 mV	14.46 ft	200.00 ml/min
11/11/2020 3:05 PM	45:00	7.69 pH	20.47 °C	292.30 µS/cm	1.97 mg/L	4.09 NTU	-49.2 mV	14.54 ft	200.00 ml/min
11/11/2020 3:10 PM	50:00	7.69 pH	20.31 °C	292.29 µS/cm	2.22 mg/L	4.19 NTU	-92.4 mV	14.54 ft	200.00 ml/min
11/11/2020 3:15 PM	55:00	7.69 pH	20.25 °C	292.90 µS/cm	2.34 mg/L	3.69 NTU	-91.1 mV	14.56 ft	200.00 ml/min
11/11/2020 3:20 PM	01:00:00	7.68 pH	20.22 °C	293.10 µS/cm	2.43 mg/L	4.06 NTU	-44.4 mV	14.58 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-42D	Grab Sample

Low-Flow Test Report:

Test Date / Time: 11/10/2020 9:26:05 AM

Project: GP-Plant Hammond

Operator Name: Thomas Kessler

Location Name: HGWA-43D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 51.25 ft Initial Depth to Water: 17.63 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 56.25 ft Estimated Total Volume Pumped: 5000 ml Flow Cell Volume: 90 ml Final Flow Rate: 100 ml/min Final Draw Down: 2.52 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 = 61.80 ft.

Weather Conditions:

Cloudy, 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	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
11/10/2020 9:26 AM	00:00	7.43 pH	19.51 °C	519.66 µS/cm	2.23 mg/L	13.90 NTU	66.7 mV	17.63 ft	100.00 ml/min
11/10/2020 9:31 AM	05:00	7.31 pH	18.97 °C	526.55 µS/cm	0.85 mg/L	13.90 NTU	36.6 mV	18.00 ft	100.00 ml/min
11/10/2020 9:36 AM	10:00	7.30 pH	18.73 °C	526.05 µS/cm	0.47 mg/L	11.52 NTU	27.9 mV	18.54 ft	100.00 ml/min
11/10/2020 9:41 AM	15:00	7.30 pH	18.70 °C	529.05 µS/cm	0.41 mg/L	8.72 NTU	21.7 mV	18.75 ft	100.00 ml/min
11/10/2020 9:46 AM	20:00	7.29 pH	18.70 °C	531.52 µS/cm	0.35 mg/L	6.87 NTU	15.7 mV	19.08 ft	100.00 ml/min
11/10/2020 9:51 AM	25:00	7.28 pH	18.66 °C	532.18 µS/cm	0.31 mg/L	6.52 NTU	10.3 mV	19.26 ft	100.00 ml/min
11/10/2020 9:56 AM	30:00	7.28 pH	18.61 °C	533.94 µS/cm	0.30 mg/L	3.33 NTU	4.6 mV	19.45 ft	100.00 ml/min
11/10/2020 10:01 AM	35:00	7.27 pH	18.62 °C	533.72 µS/cm	0.26 mg/L	3.21 NTU	-0.3 mV	19.55 ft	100.00 ml/min
11/10/2020 10:06 AM	40:00	7.27 pH	18.55 °C	526.45 µS/cm	0.23 mg/L	3.37 NTU	-6.1 mV	19.75 ft	100.00 ml/min
11/10/2020 10:11 AM	45:00	7.28 pH	18.47 °C	524.76 µS/cm	0.20 mg/L	2.55 NTU	-12.1 mV	19.95 ft	100.00 ml/min
11/10/2020 10:16 AM	50:00	7.27 pH	18.43 °C	522.45 µS/cm	0.18 mg/L	2.29 NTU	-16.8 mV	20.15 ft	100.00 ml/min

Samples

Sample ID:	Description:
HGWA-43D	Grab Sample

Low-Flow Test Report:

Test Date / Time: 11/10/2020 1:01:59 PM

Project: GP-Plant Hammond

Operator Name: Shawn Lin

<p>Location Name: HGWA-44D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 103.28 ft Initial Depth to Water: 16.81</p>	<p>Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 108.28 m Estimated Total Volume Pumped: 23.7 liter Flow Cell Volume: 90 ml Final Flow Rate: 120 ml/min Final Draw Down: 19.75 ft</p>	<p>Instrument Used: Aqua TROLL 400 Serial Number: 728634</p>
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Test Notes:

AquaTroll battery died at 13:11, continued purge to lower turbidity while charging the AquaTroll. Restarted purge at 14:27.

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 = 113.30 ft.

Weather Conditions:

Cloudy, 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 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
11/10/2020 1:01 PM	00:00	7.82 pH	18.48 °C	491.24 µS/cm	0.35 mg/L		-85.8 mV		200.00 ml/min
11/10/2020 1:06 PM	05:00	7.82 pH	18.44 °C	496.57 µS/cm	0.28 mg/L	58.10 NTU	-88.6 mV	18.72 ft	200.00 ml/min
11/10/2020 1:11 PM	10:00	7.83 pH	18.42 °C	497.00 µS/cm	0.24 mg/L		-80.0 mV	18.72 ft	200.00 ml/min
11/10/2020 1:14 PM	12:41	7.83 pH	18.40 °C	495.66 µS/cm	0.24 mg/L		-94.2 mV	18.72 ft	200.00 ml/min
11/10/2020 2:27 PM	01:25:08	7.82 pH	18.71 °C	509.00 µS/cm	0.18 mg/L	39.00 NTU	-52.0 mV	19.51 ft	120.00 ml/min
11/10/2020 2:32 PM	01:30:35	7.82 pH	18.69 °C	507.62 µS/cm	0.17 mg/L	34.10 NTU	-83.2 mV	19.51 ft	120.00 ml/min
11/10/2020 2:37 PM	01:35:35	7.83 pH	18.68 °C	506.98 µS/cm	0.16 mg/L	28.00 NTU	-78.6 mV	19.55 ft	120.00 ml/min
11/10/2020 2:42 PM	01:40:35	7.83 pH	18.64 °C	507.98 µS/cm	0.15 mg/L	28.40 NTU	-78.0 mV	19.55 ft	120.00 ml/min
11/10/2020 2:47 PM	01:45:35	7.83 pH	18.60 °C	507.25 µS/cm	0.15 mg/L	26.80 NTU	-77.8 mV	19.60 ft	120.00 ml/min

11/10/2020 2:52 PM	01:50:35	7.83 pH	18.57 °C	506.67 µS/cm	0.15 mg/L	26.90 NTU	-77.7 mV	19.60 ft	120.00 ml/min
11/10/2020 2:57 PM	01:55:35	7.83 pH	18.60 °C	505.33 µS/cm	0.13 mg/L	26.00 NTU	-78.2 mV	19.63 ft	120.00 ml/min
11/10/2020 3:02 PM	02:00:35	7.84 pH	18.59 °C	505.55 µS/cm	0.13 mg/L	26.30 NTU	-78.3 mV	19.69 ft	120.00 ml/min
11/10/2020 3:07 PM	02:05:35	7.84 pH	18.54 °C	504.45 µS/cm	0.13 mg/L	25.80 NTU	-78.1 mV	19.69 ft	120.00 ml/min
11/10/2020 3:12 PM	02:10:35	7.84 pH	18.51 °C	504.23 µS/cm	0.12 mg/L	24.40 NTU	-78.3 mV	19.69 ft	120.00 ml/min
11/10/2020 3:17 PM	02:15:35	7.84 pH	18.51 °C	503.85 µS/cm	0.12 mg/L	22.90 NTU	-78.1 mV	19.69 ft	120.00 ml/min
11/10/2020 3:22 PM	02:20:35	7.84 pH	18.52 °C	503.63 µS/cm	0.12 mg/L	22.20 NTU	-77.9 mV	19.69 ft	120.00 ml/min
11/10/2020 3:27 PM	02:25:35	7.84 pH	18.51 °C	502.69 µS/cm	0.13 mg/L	20.60 NTU	-78.3 mV	19.69 ft	120.00 ml/min
11/10/2020 3:32 PM	02:30:35	7.84 pH	18.51 °C	501.88 µS/cm	0.12 mg/L	22.00 NTU	-78.4 mV	19.69 ft	120.00 ml/min
11/10/2020 3:37 PM	02:35:35	7.84 pH	18.51 °C	501.99 µS/cm	0.11 mg/L	21.40 NTU	-78.3 mV	19.71 ft	120.00 ml/min
11/10/2020 3:42 PM	02:40:35	7.84 pH	18.53 °C	502.57 µS/cm	0.12 mg/L	20.40 NTU	-78.4 mV	19.71 ft	120.00 ml/min
11/10/2020 3:47 PM	02:45:35	7.84 pH	18.51 °C	501.78 µS/cm	0.12 mg/L	19.60 NTU	-78.7 mV	19.71 ft	120.00 ml/min
11/10/2020 3:52 PM	02:50:35	7.84 pH	18.52 °C	502.02 µS/cm	0.12 mg/L	19.80 NTU	-78.8 mV	19.71 ft	120.00 ml/min

Samples

Sample ID:	Description:
HGWA-44D	Grab Sample
HGWA-44D, filtered	Grab Sample

Low-Flow Test Report:

Test Date / Time: 12/15/2020 3:46:13 PM

Project: GP-Plant Hammond

Operator Name: Shawn Lin

Location Name: HGWA-42D Well Diameter: 2 ft Casing Type: PVC Screen Length: 10 ft Top of Screen: 58.03 ft Initial Depth to Water: 9.96 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 63.03 ft Estimated Total Volume Pumped: 7.5 liters Flow Cell Volume: 90 ml Final Flow Rate: 125 ml/min Final Draw Down: 0.32 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 = 68.03 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 3:46 PM	00:00	7.71 pH	16.61 °C	284.97 µS/cm	0.50 mg/L		-35.9 mV		125.00 ml/min
12/15/2020 3:51 PM	05:00	7.68 pH	16.40 °C	285.53 µS/cm	0.39 mg/L	6.65 NTU	-49.9 mV	11.02 ft	125.00 ml/min
12/15/2020 3:56 PM	10:00	7.67 pH	16.38 °C	286.06 µS/cm	0.33 mg/L	6.85 NTU	-82.2 mV	11.11 ft	125.00 ml/min
12/15/2020 4:01 PM	15:00	7.67 pH	16.45 °C	283.93 µS/cm	0.28 mg/L	6.22 NTU	-56.2 mV	11.17 ft	125.00 ml/min
12/15/2020 4:06 PM	20:00	7.66 pH	16.54 °C	284.91 µS/cm	0.26 mg/L	6.62 NTU	-57.3 mV	11.24 ft	125.00 ml/min
12/15/2020 4:11 PM	25:00	7.66 pH	16.27 °C	287.75 µS/cm	0.23 mg/L	6.44 NTU	-94.5 mV	11.28 ft	125.00 ml/min
12/15/2020 4:16 PM	30:00	7.66 pH	16.23 °C	287.77 µS/cm	0.22 mg/L	6.88 NTU	-58.5 mV	11.34 ft	125.00 ml/min
12/15/2020 4:21 PM	35:00	7.65 pH	16.18 °C	290.90 µS/cm	0.20 mg/L	7.37 NTU	-59.1 mV	11.34 ft	125.00 ml/min
12/15/2020 4:26 PM	40:00	7.65 pH	16.22 °C	293.63 µS/cm	0.19 mg/L	5.72 NTU	-60.6 mV	11.34 ft	125.00 ml/min
12/15/2020 4:31 PM	45:00	7.64 pH	16.11 °C	296.11 µS/cm	0.17 mg/L	4.79 NTU	-110.7 mV	11.34 ft	125.00 ml/min

Samples

Sample ID:	Description:
HGWA-42D	Grab Sample

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 12/15/2020 9:50:43 AM

Project: GP-Plant Hammond

Operator Name: Thomas Kessler

Location Name: HGWA-43D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 52.55 ft Initial Depth to Water: 14.51 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 57.55 ft Estimated Total Volume Pumped: 9 liters Flow Cell Volume: 90 ml Final Flow Rate: 100 ml/min Final Draw Down: 1.6 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). Total depth = 61.80 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	7.34 pH	14.21 °C	526.82 µS/cm	1.46 mg/L	29.90 NTU	-59.7 mV	14.51 ft	100.00 ml/min
12/15/2020 9:55 AM	05:00	7.30 pH	15.61 °C	517.14 µS/cm	0.70 mg/L	37.61 NTU	-60.6 mV	15.00 ft	100.00 ml/min
12/15/2020 10:00 AM	10:00	7.31 pH	16.28 °C	515.08 µS/cm	0.96 mg/L	33.61 NTU	-108.1 mV	15.34 ft	100.00 ml/min
12/15/2020 10:05 AM	15:00	7.32 pH	16.55 °C	508.92 µS/cm	0.89 mg/L	24.82 NTU	-115.1 mV	15.61 ft	100.00 ml/min
12/15/2020 10:10 AM	20:00	7.34 pH	16.75 °C	498.96 µS/cm	0.60 mg/L	21.50 NTU	-69.4 mV	15.75 ft	100.00 ml/min
12/15/2020 10:15 AM	25:00	7.35 pH	16.80 °C	484.29 µS/cm	0.48 mg/L	19.06 NTU	-67.3 mV	15.85 ft	100.00 ml/min
12/15/2020 10:20 AM	30:00	7.35 pH	16.93 °C	475.04 µS/cm	0.57 mg/L	15.28 NTU	-65.8 mV	15.92 ft	100.00 ml/min
12/15/2020 10:25 AM	35:00	7.36 pH	17.09 °C	465.50 µS/cm	0.45 mg/L	14.47 NTU	-110.0 mV	15.97 ft	100.00 ml/min
12/15/2020 10:30 AM	40:00	7.36 pH	17.08 °C	459.56 µS/cm	0.35 mg/L	14.03 NTU	-108.6 mV	16.02 ft	100.00 ml/min
12/15/2020 10:35 AM	45:00	7.37 pH	17.28 °C	453.06 µS/cm	0.42 mg/L	12.14 NTU	-110.5 mV	16.05 ft	100.00 ml/min
12/15/2020 10:40 AM	50:00	7.37 pH	17.31 °C	447.42 µS/cm	0.32 mg/L	11.04 NTU	-61.9 mV	16.08 ft	100.00 ml/min

12/15/2020 10:45 AM	55:00	7.37 pH	17.26 °C	447.49 µS/cm	0.82 mg/L	10.63 NTU	-60.8 mV	16.10 ft	100.00 ml/min
12/15/2020 10:50 AM	01:00:00	7.38 pH	17.18 °C	447.76 µS/cm	0.74 mg/L	9.65 NTU	-58.5 mV	16.11 ft	100.00 ml/min
12/15/2020 10:55 AM	01:05:00	7.38 pH	16.87 °C	454.65 µS/cm	0.71 mg/L	8.89 NTU	-104.5 mV	16.11 ft	100.00 ml/min
12/15/2020 11:00 AM	01:10:00	7.39 pH	16.77 °C	455.20 µS/cm	0.44 mg/L	7.34 NTU	-101.8 mV	16.11 ft	100.00 ml/min
12/15/2020 11:05 AM	01:15:00	7.39 pH	17.04 °C	451.13 µS/cm	0.31 mg/L	6.63 NTU	-58.6 mV	16.11 ft	100.00 ml/min
12/15/2020 11:10 AM	01:20:00	7.40 pH	17.26 °C	448.17 µS/cm	0.31 mg/L	6.43 NTU	-56.8 mV	16.11 ft	100.00 ml/min
12/15/2020 11:15 AM	01:25:00	7.40 pH	17.20 °C	452.85 µS/cm	0.27 mg/L	5.33 NTU	-56.6 mV	16.11 ft	100.00 ml/min
12/15/2020 11:20 AM	01:30:00	7.39 pH	17.11 °C	453.03 µS/cm	0.22 mg/L	4.88 NTU	-55.8 mV	16.11 ft	100.00 ml/min

Samples

Sample ID:	Description:
HGWA-43D	Grab Sample

Low-Flow Test Report:

Test Date / Time: 12/15/2020 1:09:32 PM

Project: GP-Plant Hammond

Operator Name: Thomas Kessler

Location Name: HGWA-44D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 103.25 ft Initial Depth to Water: 14.4 ft	Pump Type: Bladder Tubing Type: Polyethylene Pump Intake From TOC: 108 ft Estimated Total Volume Pumped: 18.5 liters Flow Cell Volume: 90 ml Final Flow Rate: 100 ml/min Final Draw Down: 2.33 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). Total depth = 111.3 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 1:09 PM	00:00	7.90 pH	15.77 °C	484.96 µS/cm	1.80 mg/L	63.27 NTU	-106.7 mV	14.40 ft	100.00 ml/min
12/15/2020 1:14 PM	05:00	7.90 pH	16.46 °C	498.20 µS/cm	1.07 mg/L	98.00 NTU	-105.8 mV	14.55 ft	100.00 ml/min
12/15/2020 1:19 PM	10:00	7.90 pH	16.38 °C	499.17 µS/cm	0.74 mg/L	114.00 NTU	-182.1 mV	14.70 ft	100.00 ml/min
12/15/2020 1:24 PM	15:00	7.90 pH	16.30 °C	497.96 µS/cm	0.64 mg/L	112.00 NTU	-186.3 mV	14.93 ft	100.00 ml/min
12/15/2020 1:29 PM	20:00	7.90 pH	16.37 °C	496.40 µS/cm	0.57 mg/L	139.00 NTU	-114.7 mV	15.13 ft	100.00 ml/min
12/15/2020 1:34 PM	25:00	7.90 pH	16.26 °C	494.15 µS/cm	0.52 mg/L	128.00 NTU	-191.2 mV	15.28 ft	100.00 ml/min
12/15/2020 1:39 PM	30:00	7.90 pH	16.24 °C	491.16 µS/cm	0.48 mg/L	92.00 NTU	-194.6 mV	15.45 ft	100.00 ml/min
12/15/2020 1:44 PM	35:00	7.90 pH	16.52 °C	488.12 µS/cm	0.43 mg/L	50.00 NTU	-119.5 mV	15.60 ft	100.00 ml/min
12/15/2020 1:49 PM	40:00	7.90 pH	16.59 °C	483.68 µS/cm	0.40 mg/L	61.95 NTU	-200.0 mV	15.65 ft	100.00 ml/min
12/15/2020 1:54 PM	45:00	7.90 pH	16.81 °C	479.85 µS/cm	0.37 mg/L	49.82 NTU	-123.8 mV	15.77 ft	100.00 ml/min
12/15/2020 1:59 PM	50:00	7.90 pH	16.55 °C	493.05 µS/cm	0.35 mg/L	58.41 NTU	-124.2 mV	15.82 ft	100.00 ml/min
12/15/2020 2:04 PM	55:00	7.90 pH	16.64 °C	494.17 µS/cm	0.35 mg/L	38.92 NTU	-126.4 mV	15.90 ft	100.00 ml/min

12/15/2020 2:09 PM	01:00:00	7.90 pH	16.69 °C	492.65 µS/cm	0.32 mg/L	28.72 NTU	-207.7 mV	15.90 ft	100.00 ml/min
12/15/2020 2:14 PM	01:05:00	7.89 pH	16.55 °C	490.67 µS/cm	0.30 mg/L	23.69 NTU	-126.3 mV	15.91 ft	100.00 ml/min
12/15/2020 2:19 PM	01:10:00	7.88 pH	16.37 °C	492.49 µS/cm	0.29 mg/L	21.04 NTU	-124.5 mV	15.95 ft	100.00 ml/min
12/15/2020 2:24 PM	01:15:00	7.89 pH	16.26 °C	489.74 µS/cm	0.28 mg/L	18.27 NTU	-124.8 mV	15.95 ft	100.00 ml/min
12/15/2020 2:29 PM	01:20:00	7.88 pH	16.10 °C	488.48 µS/cm	0.28 mg/L	17.32 NTU	-207.2 mV	16.00 ft	100.00 ml/min
12/15/2020 2:34 PM	01:25:00	7.88 pH	15.93 °C	489.52 µS/cm	0.27 mg/L	15.96 NTU	-126.3 mV	16.05 ft	100.00 ml/min
12/15/2020 2:39 PM	01:30:00	7.88 pH	15.96 °C	489.65 µS/cm	0.26 mg/L	18.00 NTU	-126.0 mV	16.00 ft	100.00 ml/min
12/15/2020 2:44 PM	01:35:00	7.88 pH	15.96 °C	486.86 µS/cm	0.26 mg/L	16.95 NTU	-206.9 mV	16.00 ft	100.00 ml/min
12/15/2020 2:49 PM	01:40:00	7.88 pH	16.15 °C	485.86 µS/cm	0.25 mg/L	16.43 NTU	-207.8 mV	16.05 ft	100.00 ml/min
12/15/2020 2:54 PM	01:45:00	7.88 pH	16.01 °C	489.56 µS/cm	0.24 mg/L	16.22 NTU	-125.5 mV	16.05 ft	100.00 ml/min
12/15/2020 2:59 PM	01:50:00	7.88 pH	15.89 °C	489.90 µS/cm	0.24 mg/L	16.47 NTU	-124.1 mV	16.05 ft	100.00 ml/min
12/15/2020 3:04 PM	01:55:00	7.88 pH	15.74 °C	490.53 µS/cm	0.25 mg/L	13.59 NTU	-204.7 mV	16.05 ft	100.00 ml/min
12/15/2020 3:09 PM	02:00:00	7.87 pH	15.83 °C	489.04 µS/cm	0.25 mg/L	14.49 NTU	-206.8 mV	16.05 ft	100.00 ml/min
12/15/2020 3:14 PM	02:05:00	7.87 pH	16.38 °C	488.60 µS/cm	0.22 mg/L	14.19 NTU	-126.3 mV	16.20 ft	100.00 ml/min
12/15/2020 3:19 PM	02:10:00	7.87 pH	16.44 °C	486.41 µS/cm	0.19 mg/L	13.34 NTU	-209.6 mV	16.30 ft	100.00 ml/min
12/15/2020 3:24 PM	02:15:00	7.86 pH	16.46 °C	487.69 µS/cm	0.17 mg/L	13.09 NTU	-127.4 mV	16.35 ft	100.00 ml/min
12/15/2020 3:29 PM	02:20:00	7.88 pH	16.38 °C	491.48 µS/cm	0.16 mg/L	13.05 NTU	-126.5 mV	16.43 ft	100.00 ml/min
12/15/2020 3:34 PM	02:25:00	7.88 pH	16.35 °C	491.38 µS/cm	0.15 mg/L	12.11 NTU	-125.1 mV	16.50 ft	100.00 ml/min
12/15/2020 3:39 PM	02:30:00	7.88 pH	16.30 °C	489.46 µS/cm	0.15 mg/L	12.06 NTU	-207.6 mV	16.50 ft	100.00 ml/min
12/15/2020 3:44 PM	02:35:00	7.88 pH	16.30 °C	488.61 µS/cm	0.14 mg/L	11.87 NTU	-208.3 mV	16.60 ft	100.00 ml/min
12/15/2020 3:49 PM	02:40:00	7.87 pH	16.28 °C	488.02 µS/cm	0.13 mg/L	11.04 NTU	-124.4 mV	16.62 ft	100.00 ml/min
12/15/2020 3:54 PM	02:45:00	7.88 pH	16.30 °C	487.19 µS/cm	0.13 mg/L	11.03 NTU	-206.7 mV	16.65 ft	100.00 ml/min
12/15/2020 3:59 PM	02:50:00	7.88 pH	16.30 °C	487.66 µS/cm	0.13 mg/L	10.78 NTU	-122.7 mV	16.67 ft	100.00 ml/min
12/15/2020 4:04 PM	02:55:00	7.88 pH	16.28 °C	486.45 µS/cm	0.12 mg/L	8.75 NTU	-204.0 mV	16.70 ft	100.00 ml/min
12/15/2020 4:09 PM	03:00:00	7.86 pH	16.28 °C	486.14 µS/cm	0.12 mg/L	9.69 NTU	-203.7 mV	16.69 ft	100.00 ml/min
12/15/2020 4:14 PM	03:05:00	7.87 pH	16.32 °C	488.28 µS/cm	0.12 mg/L	9.00 NTU	-203.5 mV	16.73 ft	100.00 ml/min

Samples

Sample ID:	Description:
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HGWA-44D	Grab Sample
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Calibration Logs

EQUIPMENT CALIBRATION LOG

Field Technician: Grant Walter Date: 1/22/20 Time (start): 7:45 Time (finish): 8:07
 smarTroll SN: 642531 Turbidity Meter Type: LaMotte SN: 4392-1914
 Weather Conditions: Clear Skys, ~25°F Facility and Unit: Hammond Project No: _____

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)	19150080 07/20	25	4490	4345	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4.00	4.00	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	1907041 07/20	25	7.00	7.06	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	18449291 07/20	25	10.00	10.16	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19280054 07/20	25	228	255	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	92.9	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0.00	0.25	0.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1.00	1.03	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10.0	8.00	10.0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Breder Date: 3-2-2020 Time (start): 0750 Time (finish): 0830
 smartTroll SN: 339797 Turbidity Meter Type: Lamohz 202vz SN: 977-2111
 Weather Conditions: Rain cloudy Facility and Unit: Plant Hamond Project No: 6w

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	12.67	4490	4800	4477.1	± 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.0	3.97	3.97	± 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 8/21	12.9	7.00	7.16	7.00	± 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/21	12.7	10.00	9.87	10.00	± 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460	12.4	+228	239.5	228.	± 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100.0	97.2	97.0	± 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	0.83	1.00	± 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	8.93	10.0	± 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/12/2016

Time (start): 0730

Time (finish): 0825

smarTroll SN: 538243

Turbidity Meter Type: LaMotte 2020we

SN: 2999-0713

Weather Conditions: 48°F; raining

Facility and Unit: Hammond

Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20016025 08/2021	13	4490	5011	4490	±.5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.5	4	±.0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19346057 08/2021	12.5	7	6.64	7	±.0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320162 08/2021	12.1	10	8.56	10	±.0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19960162 08/2021	11.5	228	235.4	235.4	±.20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	100	101.7	±.6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.41	0.41	±.0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	1.38	1.38	±.0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.61	10	±.0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shaun Liu Date: 5/2/2020 Time (start): 07:15 ~~08:00~~ ^{EL} Time (finish): 08:00
 SmartTroll SN: 448902 Turbidity Meter Type: 2070We SN: _____
 Weather Conditions: Rainy 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	4643	4490	± 5%	<input checked="" type="checkbox"/> Yes No	
pH (4)	08/2021	25	4.00	4.56	4.00	± 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (7)	#20010025 08/2021	19340057 25	7.06	7.22	7.06	± 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	#19340057 08/2021	19320102 25	10.08	9.98	10.08	± 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	#19320102 08/2021	19460617	246	235.9	246	± 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	96.4	—	± 6% saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0.00	0.00	—	± 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1.00	1.22	—	± 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10.00	10.22	—	± 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: T. Payne Date: 3/2/2020 Time (start): 7:45 Time (finish): 8:10

smarTroll SN: R29827 Turbidity Meter Type: LaMotte2020we SN: 2984-0423

Weather Conditions: rain Facility and Unit: Plant Hammond Project No.: GW6581B

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	13.4	4490	5117	4490	+/- 5 %	Yes	
pH (4)			4	4.01	--	+/- 0.1 SU	Yes	
pH (7)	19348051 8/21	13.3	7	6.96	--	+/- 0.1 SU	Yes	
pH (10)	1932022 8/21	13.5	10	10.03	--	+/- 0.1 SU	Yes	
ORP (mV)	19480167	13.3	228	225	--	+/- 20mV	Yes	
DO (%) (1pt, 100% water saturated air cal)			100	96.7	--	+/- 6 % saturation	Yes	
Turbidity 0 NTU			0	0.01	--	+/- 0.5 NTU	Yes	
Turbidity 1 NTU			1	0.98	--	+/- 0.5 NTU	Yes	
Turbidity 10 NTU			10	8.75	9.99	+/- 0.5 NTU	Yes	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Reeder

Date: 3-3-2020

Time (start): 0715

Time (finish): 0745

SmartTroll SN: 339747

Turbidity Meter Type: Lamotte 2020

SN: 977-2111

Weather Conditions: Cloudy Rain

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 8/21	12.4	4490	4477	4490	±5%	<input checked="" type="radio"/> Yes No	
pH (4)			4.0	4.51	4.50	±0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 8/21	12.5	7.0	7.04	7.0	±0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 8/21	12.5	10.0	9.84	10.0	±0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 8/21	12.6 12.5	238 239.3	239.3	228.0	±20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	48.0%	48.0%	±6% saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	1.85	0	±0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1.0	1.87	1.0	±0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10.0	9.18 15.07	10.0	±0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 3/3/2020 Time (start): 0740 Time (finish): 0820
 Smart TROLL SN: 538243 Turbidity Meter Type: LaMotte 2026 uc SN: 2949-0413
 Weather Conditions: 55°F; raining Facility and Unit: Hammond Project No.: ENW6581

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	14.9	4490	4550	4508	+/- 5%	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4	4.54	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 08/2021	15.6	5.62	7	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 08/2021	16.1	8	10	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167	16.5	228	228 227.2	227.1	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	101.9	102.2	+/- 6% saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.41	0.41	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	1.30	1.30	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	10.46	10.46	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: T. Payne Date: 3/3/2020 Time (start): 7:00 Time (finish): 7:30

smarTroll SN: R29827 Turbidity Meter Type: LaMotte2020we SN: 2984-0423

Weather Conditions: rain Facility and Unit: Plant Hammond Project No.: GW6581B

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	13.3	4490	4598	4488	+/- 5 %	Yes	
pH (4)			4	4.05	--	+/- 0.1 SU	Yes	
pH (7)	19348051 8/21	13.3	7	7.24	7.01	+/- 0.1 SU	Yes	
pH (10)	1932022 8/21	13.4	10	9.96	--	+/- 0.1 SU	Yes	
ORP (mV)	19480167	13.4	228	255.5	228	+/- 20mV	Yes	
DO (%) (1pt, 100% water saturated air cal)			100	96.4	--	+/- 6 % saturation	Yes	
Turbidity 0 NTU			0	0.01	--	+/- 0.5 NTU	Yes	
Turbidity 1 NTU			1	0.8	--	+/- 0.5 NTU	Yes	
Turbidity 10 NTU			10	8.61	9.98	+/- 0.5 NTU	Yes	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Reader

Date: 3-25-2020

Time (start): 0715

Time (finish): 0740

smarTroll SN: 440279

Turbidity Meter Type: Lamotte
202we

SN: 6389-1416

Weather Conditions: Clear

Facility and Unit: Plant Hammond

Project No.: 6W6581

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	16.2	4490	4144	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)		16.3	4.00	4.32	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 08/2021	16.3	7.00	7.12	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/2021	16.6	10.00	9.91	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 08/2021	16.4	+228	236.5	+228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	92.6%	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			1.00 1.00	1.09	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10.00	8.40	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/25/2020

Time (start): 0725

Time (finish): 0800

SmartTroll SN: 364452

Turbidity Meter Type: LqMotte 2020e

SN: 710-0711

Weather Conditions: 57°F, cloudy

Facility and Unit: Hammond

Project No.: GW6501

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	17.7	4490	4037	4490	± 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4	4.29	4	± 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 8/2021	18	7	7.11	7	± 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320162 8/2021	18.2	10	9.87	9.9	± 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	18.3	228	233.6	233.6	± 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	90.7	94.6	± 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.01	0.01	± 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	0.91	0.91	± 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	10.6	10.44	± 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin

Date: 3/25/2020

Time (start): 7:25

Time (finish): 7:50

smarTroll SN: 497963

Turbidity Meter Type: 2020W6

SN: 2953

Weather Conditions: clear

Facility and Unit: Plant Hammond

Project No: GW6501

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	#200/0025	30	4490	4726	4490	± 5%	Yes No	
pH (4)	08/2021	17.9	4.00	4.38	4.00	± 0.1 SU	Yes No	
pH (7)	#19340057 08/21	18.0	7.02	7.25	7.02	± 0.1 SU	Yes No	
pH (10)	#19320102 08/21	18.0	10.04	9.76	10.04	± 0.1 SU	Yes No	
ORP (mV)	#19460167 08/2021	17.9	228	229.5	228	± 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	91.5	100	± 6% saturation	Yes No	
Turbidity 0 NTU			0	0	0	± 0.5 NTU	Yes No	
Turbidity 1 NTU			1	0.68	1.08	± 0.5 NTU	Yes No	
Turbidity 10 NTU			10	10.85	9.94	± 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Nelson Gung

Date: 3/25/20

Time (start): 7:00

Time (finish): 7:49

SmartTroll SN: 466615

Turbidity Meter Type: Lamotte 2020we

SN: 1603

Weather Conditions: Sunny @ 60's-70's

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	18.9°C	4490	4301	4490	± 5%	<input checked="" type="checkbox"/> No	
pH (4)		11.6°C	4.00	4.38	4.00	± 0.1 SU	<input checked="" type="checkbox"/> No	
pH (7)	19340057 08/2021	11.6°C	7.00	7.17	7.00	± 0.1 SU	<input checked="" type="checkbox"/> No	
pH (10)	19320102 08/2021	11.7°C	10.00	9.85	10.00	± 0.1 SU	<input checked="" type="checkbox"/> No	
ORP (mV)	19960167 08/2021	11.5°C	228	233.7	228	± 20mV	<input checked="" type="checkbox"/> No	
DO (%) (1pt. 100% water saturated air cal)			100%	94.0%	100%	± 6% saturation	<input checked="" type="checkbox"/> No	
Turbidity 0 NTU			0.0	0.01	0.0	± 0.5 NTU	<input checked="" type="checkbox"/> No	
Turbidity 1 NTU			1.0	0.95	1.0	± 0.5 NTU	<input checked="" type="checkbox"/> No	
Turbidity 10 NTU			10.0	12.94	10.0	± 0.5 NTU	<input checked="" type="checkbox"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Reeder

Date: 3-26-2020

Time (start): 0705

Time (finish): 0734

smarTroll SN: 440279

Turbidity Meter Type: LaMotte 2020 w/c

SN: 6389-1416

Weather Conditions: Clear

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	11.6	4490	4353	4490	± 5 %	<input checked="" type="radio"/> Yes No	
pH (4)		11.8	4.00	4.42	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 08/2021	11.6	7.00	7.15	7.00	± 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/2021	11.8	10.00	9.90	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 08/2021	11.6	+228	+243.0	+228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	96.6%	100%	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	-0.01	0	± 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	1.14	1.0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.2	10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/26/2020

Time (start): 0932

Time (finish): 0950

smatTroll SN: 364452

Turbidity Meter Type: LaMotte 2020mc

SN: 710-0711

Weather Conditions: 54°F; cloudy

Facility and Unit: Hammahad

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	15.89	4490	4975.8	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	8/2021		4	4	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 8/2021	16.34	7	7.01	7.01	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/2021	16.7	10	9.99	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	16.47	228	230.3	230.3	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	95.59	94.28	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.21	0.21	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	0.7	0.7	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	9.27	10.04	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Nelson Cunby

Date: 3 26 20

Time (start): 7:00 am

Time (finish): 2:45

SmartTroll SN: 406615

Turbidity Meter Type: Lamotte 2020WE

SN: 1003

Weather Conditions: clear 50°

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)	20010625 08/2021	9.3 ^{oC}	4490	4765	4490	+/- 5%	<input checked="" type="checkbox"/> Yes No	
pH (4)		9.2 ^{oC}	4.0	4.42	4.0	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (7)	19340057 08/2021	9.5 ^{oC}	7.0	7.15	7.0	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	19320102 08/2021	9.4 ^{oC}	10.0	9.80	10.0	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	19960167 08/2021	8.6 ^{oC}	228	238.3	228	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	98.4	100%	+/- 6% saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0.0	0.0	0.0	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1.0	1.29	1.0	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10.0	13.0	10.0	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin

Date: 3/26/2020

Time (start): 9:20

Time (finish): 8:00

SmartTroll SN: 646777

Turbidity Meter Type: 2020 We ~~2953~~ (S)

SN: 2953

Weather Conditions: clear

Facility and Unit: Plant Hammond

Project No: GW681

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)	#2001005 08/2021	17.7	4490	4261	4490	± 5%	<input checked="" type="radio"/> No	
pH (4)			4.00	4.40	4.60	± 0.1 SU	<input checked="" type="radio"/> No	
pH (7)	#19340057 08/2021	17.9	7.02	7.29	7.02	± 0.1 SU	<input checked="" type="radio"/> No	
pH (10)	#19320102 08/2021	18.2	10.04	9.99	10.04	± 0.1 SU	<input checked="" type="radio"/> No	
ORP (mV)	#19460167 08/2021	17.9	228	228.5	228	± 20mV	<input checked="" type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	91.6	100	± 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	0.87	0.93	± 0.5 NTU	<input checked="" type="radio"/> No	
Turbidity 10 NTU			10	9.70	9.98	± 0.5 NTU	<input checked="" type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Reeder

Date: 3-27-2020

Time (start): 0748

Time (finish): 0820

SmartTroll SN: 440279

Turbidity Meter Type: Lamotte

SN: 6389-1416

Weather Conditions: Sunny

Facility and Unit: Plant Harmon & Huffaker

Project No.: 646581B

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	14.9	4440	4538	4440	± 5 %	Yes No	
pH (4)		14.8	4.00	4.35	4.00	± 0.1 SU	Yes No	
pH (7)	19340057 08/2021	15.3	7.00	7.13	7.00	± 0.1 SU	Yes No	
pH (10)	19320102 08/2021	15.6	10.00	9.89	10.00	± 0.1 SU	Yes No	
ORP (mV)	19460167 08/2021	15.6	+228	+236.8	+228	± 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100 %	92.8%	100%	± 6 % saturation	Yes No	
Turbidity 0 NTU			0	-0.01	0	± 0.5 NTU	Yes No	
Turbidity 1 NTU			1	1.82	1.00	± 0.5 NTU	Yes No	
Turbidity 10 NTU			10	9.78	10.00	± 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/27/2020

Time (start): 0830

Time (finish): 0952

smarTroll SN: 364452

Turbidity Meter Type: LaMotte 2020.ve

SN: 710-0711

Weather Conditions: 57°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)	20010025 8/2021	18.62	4490	4519.5	4517	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.03	4.03	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 8/2021	19.04	7	7.01	7.01	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 8/2021	19.25	10	10.02	10.03	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 8/2021	19.38	228	222.5	222.5	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	100.04	98.85	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.07	0.07	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	1.57	0.71	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	6.83	10.02	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Nelson Cuning

Date: 3/27/20

Time (start): 7:57

Time (finish): 2:49

smarTroll SN: 466615

Turbidity Meter Type: Lumette 2020we

SN: 1603

Weather Conditions: cloudy 50°s

Facility and Unit: Hammond

Project No.: G-116581

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	13.6°C	4490	4207	4490	+/- 5%	<input checked="" type="checkbox"/> No	
pH (4)		13.5°C	4.0	4.34	4.0	+/- 0.1 SU	<input checked="" type="checkbox"/> No	
pH (7)	19340057 08/2021	13.7°C	7.0	7.12	7.0	+/- 0.1 SU	<input checked="" type="checkbox"/> No	
pH (10)	14720102 08/2021	13.8°C	10.0	9.84	10.0	+/- 0.1 SU	<input checked="" type="checkbox"/> No	
ORP (mV)	19960167 08/2021	18.5°C	228	230.1	228	+/- 20mV	<input checked="" type="checkbox"/> No	
DO (%) (1pt, 100% water saturated air cal)			100%	94.9%	100%	+/- 6% saturation	<input checked="" type="checkbox"/> No	
Turbidity 0 NTU			0.0	0.02	0.0	+/- 0.5 NTU	<input checked="" type="checkbox"/> No	
Turbidity 1 NTU			1.0	0.66	1.0	+/- 0.5 NTU	<input checked="" type="checkbox"/> No	
Turbidity 10 NTU			10.0		10.0	+/- 0.5 NTU	<input checked="" type="checkbox"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin Date: 3/27/2020 Time (start): 9:50 Time (finish): 8:11

smarTroll SN: 497963 Turbidity Meter Type: 2020 We SN: 2953

Weather Conditions: Clear, 45F Facility and Unit: Plant Hammond Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	#20010025 08/2021	20.5	4490	4424	4490	± 5%	<input checked="" type="radio"/> Yes No	
pH (4)			4.00	4.36	4.00	± 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	#19340057 08/2021	20.7	7.02	7.28	7.02	± 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	#19320102 08/2021	20.7	10.04	10.01	10.04	± 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	#19460167 08/2021	20.7	228	223.2	228	± 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	91.6	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	0.95	0.98	± 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	11.56	9.93	± 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Breder

Date: 3-30-2020

Time (start): 1200

Time (finish): 1242

smarTroll SN: ~~440279~~ 728550

Turbidity Meter Type: Lamotte

SN: 6389-1416

Weather Conditions: Sunny

Facility and Unit: Plant Hammond/Huffaker

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	28.18	4440	4437.6	4440	+/- 5 %	Yes No	
pH (4)		27.94	4.00	4.15	4.00	1/- 0.1 SU	Yes No	
pH (7)	19340057 08/2021	25.29	7.00	7.10	7.00	+/- 0.1 SU	Yes No	
pH (10)	19320102 08/2021	22.76	10.00	10.15	10.00	+/- 0.1 SU	Yes No	
ORP (mV)	14460167	24.44	+228	234.6	+228	1/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	98.72%	100%	1/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	-0.01	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1	0.96	1	1/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10	9.72	10	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin Date: 3/30/2020 Time (start): 7:45 Time (finish): 8:15
 smartTroll SN: 497963 Turbidity Meter Type: 2020 We SN: 2953
 Weather Conditions: Cloudy, 45°F Facility and Unit: Plant Hammond Project No.: GW6589

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	22.7	4490	4323	4490	± 5%	<input checked="" type="radio"/> No	
pH (4)	08/2021	22.9	4.00	4.32	4.00	± 0.1 SU	<input checked="" type="radio"/> No	
pH (7)	#19340057 08/2021	22.9	7.02	7.19	7.02	± 0.1 SU	<input checked="" type="radio"/> No	
pH (10)	#19320102 08/2021	23.6 22.7	10.00 10.00	10.03	10.04	± 0.1 SU	<input checked="" type="radio"/> No	
ORP (mV)	#19460169 08/2021	22.5	228	219.0	228	± 20mV	<input checked="" type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	90.6	100	± 6% saturation	<input checked="" type="radio"/> No	
Turbidity 0 NTU			0	0.06	0	± 0.5 NTU	<input checked="" type="radio"/> No	
Turbidity 1 NTU			1	0.86	0.92	± 0.5 NTU	<input checked="" type="radio"/> No	
Turbidity 10 NTU			10	11.15	9.80	± 0.5 NTU	<input checked="" type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/30/2020

Time (start): 0905

Time (finish): 0933

smarTroll SN: 364452

Turbidity Meter Type: LaMotte 2010wc

SN: 710-0711

Weather Conditions: 61°F; sunny

Facility and Unit: Hammond

Project No.: GW658j

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	26010625 8/2021	20.15	4490	4530	4527.9	± 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	3.98	3.97	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 8/2021	20.83	7	6.98	6.98	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19326102 8/2021	21.10	10	9.98	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 8/2021	20.76	228	224.6	224.6	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	103.49	100.91	+/- 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	0.82	0.82	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.37	10.37	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Nelson Gunky

Date: 3/30/20

Time (start): 7:08

Time (finish): 2:40

SmartTroll SN: 460615

Turbidity Meter Type: Lamotte 2020we

SN: 1603

Weather Conditions: cloudy 50's

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	12.8	4490	4790	4490	+/- 5%	Yes No	
pH (4)		12.1	4.0	4.39	4.0	+/- 0.1 SU	Yes No	
pH (7)	19340057 08/2021	12.6	7.0	7.16	7.0	+/- 0.1 SU	Yes No	
pH (10)	19320102 08/2021	12.6	10.0	9.86	10.0	+/- 0.1 SU	Yes No	
ORP (mV)	19960167 08/2021	12.7	228	228.9	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	95.5	100%	+/- 6% saturation	Yes No	
Turbidity 0 NTU			0.0	0.01	0.0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1.0	0.78	1.0	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10.0	12.78	10.0	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Reeder

Date: 3-31-2020

Time (start): 0708

Time (finish): 0736

Smartroll SN: 728550

Turbidity Meter Type: LAMORTE 2020 use

SN: 6389-1416

Weather Conditions: Cloudy and cool

Facility and Unit: Plant Hammond/Huffaker 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	14.58	4490	4546	4400	± 5%	<input checked="" type="radio"/> Yes No	
pH (4)		14.54	4.00	3.97	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 08/2021	15.22	7.00	7.01	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/2021	15.89	10.00	10.03	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460967 08/2021	15.50	+228	243.6	+228	± 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1 pt, 100% water saturated air cal)			100%	102.94%	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			1.00	1.26 1.01	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10.0	9.25	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 3/31/2020

Time (start): 0820

Time (finish): 0840

SmartTroll SN: 364452

Turbidity Meter Type: LaMotte 2020 ve

SN: 710-0711

Weather Conditions: 55°F cloudy

Facility and ~~unit~~ environment

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)	20610625 8/2021	17.9	4490	4460.9	4462	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.04	4.03	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19346057 8/2021	18.08	7	7.06	7.06	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 8/2021	18.26	10	10.05	10.06	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 8/2021	18.44	231 228	231.5	231.5	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	96.94	96.47	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.05	0.05	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	0.63	0.63	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	12.67	9.9	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Nelson Conley Date: 3/31/20 Time (start): 7 am Time (finish): 740
 SmartTroll SN: 466615 Turbidity Meter Type: LaMotte 2020w SN: 1603
 Weather Conditions: cloudy 50's Facility and Unit: Hammond Project No.: GW 6581

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)	20010925 08/2021	12.7	4490	4728	4490	±.5%	Yes No	
pH (4)		12.6	4.0	4.40	4.0	±.01 SU	Yes No	
pH (7)	19340357 08/2021	12.7	7.0	7.15	7.0	±.01 SU	Yes No	
pH (10)	19320102 08/2021	12.8	10.0	9.86	10.0	±.01 SU	Yes No	
ORP (mV)	29960167 08/2021		228	229.7	2228	±.20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	96.3	100%	±.6% saturation	Yes No	
Turbidity 0 NTU			0.0	0.01	0.0	±.05 NTU	Yes No	
Turbidity 1 NTU			1.0	0.85	1.0	±.05 NTU	Yes No	
Turbidity 10 NTU			10.0	9.77	10.0	±.05 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin

Date: 03/31/2020

Time (start): 7:33

Time (finish): 8:00

SmartTroll SN: 497963

Turbidity Meter Type: 2020WU

SN: 2953

Weather Conditions: cloudy, 50°F

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	20.0	4490	4225	4490	±0.5%	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/2021		4.00	4.39	4.00	±0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	#19340057 08/2021	20.0	7.02	7.19	7.02	±0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	#19320102 08/2021	20.0	10.04	10.01	10.04	±0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	#19460167 08/21	19.9	228	223.6	228	±20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	90.9	100	±0.6% 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	0.73	0.97	±0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	10.27	10.04	±0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Aaron Reeder

Date: 4-1-2020

Time (start): 0737

Time (finish): 0757

smarTroll SN: 728550

Turbidity Meter Type: LaMotte 2020we

SN: 6389-1416

Weather Conditions: Clear and cool

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	6.52	4490	4545.4	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)		6.53	4.00	4.05	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 08/2021	6.93	7.00	7.21	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/2021	7.51	10.00	10.22	10.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 08/2021	7.37	+228	237.9	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100 %	95.75	100 %	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	-0.01	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	1.18	1	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.25	10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 4/1/2020 Time (start): 0810 Time (finish): 0830
 smarTroll SN: 364452 Turbidity Meter Type: Lafayette 2020_{ms} SN: 710-0711
 Weather Conditions: 50°F, clear Facility and Unit: Hammond Project No.: GW6591

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	10.45	4490	4548.6	4549.6	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4	4	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19370057 8/2021	11.63	7	7.02	7.02	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/2021	12.03	10	10.07	10.09	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	12.03	228	238.3	238.3	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	99.95	99.13	+/- 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	1.58	1.22	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	8.13	9.91	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin Date: 4/1/2020 Time (start): 7:30 Time (finish): 8:45
 SmartTroll SN: 497963 Turbidity Meter Type: 2020We SN: 2953
 Weather Conditions: Sunny, 40°F 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)	#7001025	B.8	4490	4218	4490	± 5%	<input checked="" type="checkbox"/> No	
pH (4)	08/2021		4.00	4.49	4.00	± 0.1 SU	<input checked="" type="checkbox"/> No	
pH (7)	#19340057 08/2021	13.6	7.00	7.20	7.00	± 0.1 SU	<input checked="" type="checkbox"/> No	
pH (10)	#19320102 08/2021	13.4	10.00	9.92	10.00	± 0.1 SU	<input checked="" type="checkbox"/> No	
ORP (mV)	#19460167 08/2021	12.07	228	235.6	228	± 20mV	<input checked="" type="checkbox"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	91.5	100	± 6% saturation	<input checked="" type="checkbox"/> No	
Turbidity 0 NTU			0	0	0.05L	± 0.5 NTU	<input checked="" type="checkbox"/> No	
Turbidity 1 NTU			1	0.77	0.98	± 0.5 NTU	<input checked="" type="checkbox"/> No	
Turbidity 10 NTU			10	9.70	9.97	± 0.5 NTU	<input checked="" type="checkbox"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 6/16/17/2020

Time (start): 0910

Time (finish): 0935

SmartTroll SN: 673819

Turbidity Meter Type: LaMotte 2020we

SN: 1475-4011

Weather Conditions: 65°F; cloudy

Facility and Unit: Hammond

Project No: GW 6591

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)	20010035 8/16/21	21.6	4490	4562	4559	+/- 5%	<input checked="" type="checkbox"/> Yes No	
pH (4)			4	4.32	4	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (7)	14340057 8/10/21	21.9	7	6.79	6.97	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	19320102 8/20/21	22.2	10	9.23	9.91	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	19460167 8/20/21	22.2	228	221.8	225.5	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	98.4	98.5	+/- 6% saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0	0.14	0.14	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1	0.56	0.56	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10	10.86	9.98	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lim

Date: 6/17/2020

Time (start): 7:25

Time (finish): 7:45

smarTroll SN: 597519

Turbidity Meter Type: LaMotte 2020WU

SN: 2289

Weather Conditions: Cloudy

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	21.3	4490	4383	4497.1	+/- 5%	<input checked="" type="checkbox"/> Yes No	
pH (4)	08/21		4.00	4.26	4.00	+/- 0.1 SU	<input type="checkbox"/> No	
pH (7)	19340057 08/2021	21.4	7.00	7.03	7.00	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	19320102 08/2021	21.2	10.00	9.96	10.00	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	19460167 08/2021	21.3	228	221.1	228.4	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	90.8	100.0	+/- 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	0.94	0.99	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10	13.09	9.99	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo

Date: 6/18/2020

Time (start): 0850

Time (finish): 0115

SmartTroll SN: 643819

Turbidity Meter Type: Lafayette 2020 w/c

SN: 1475-4011

Weather Conditions: 60°F; cloudy

Facility and Unit: Hammont

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)	20810025 8/2021	19.9	4490	4491	4478	+/- 5%	<input checked="" type="checkbox"/> Yes No	
pH (4)			4	4.21	4.21 4	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (7)	19340057 8/2021	20.7	7	6.7	6.97	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	19320102 8/2021	21.3	10	9.61	10	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	19460167 8/2021	21.7	228	2264	227.8	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	100.2	100	+/- 6% saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0	0.03	0.03	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1	0	1.15	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10	9.96	9.96	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn Lin Date: 6/18/2020 Time (start): 7:30 Time (finish): 7:55
 smartTroll SN: 597519 Turbidity Meter Type: Lalltype 1147070 SN: 2289
 Weather Conditions: cloudy 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)	200/0025	20.6	4490	4346	4505.5	+/- 5%	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/2021		4.00	4.24	4.60	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 08/2021	20.7	7.00	7.02	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 08/2021	20.8	10.00	9.93	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 08/2021	20.8	228	215.6	228.9	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			160	91.9	100.2	+/- 6% saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	-0.01	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	0.67	0.94	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	13.84	9.98	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler Date: 9/14/20 Time (start): 1106 Time (finish): 1744
 smartTroll SN: 646773 Turbidity Meter Type: LaMotte 2020we SN: 7009
 Weather Conditions: Sunny Facility and Unit: Hammond GW Project No.: 2WGS81

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	26°	4490	4369	4351 4460	+/- 5%	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	4.61	4.51 4.40	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	14340057 08/21	27.5	7.00	7.59	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	14320162 08/21	26.9	10.00	10.42	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/2021	27.1	228	192.8	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100% 47.8%	97.8%	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	1.49	1.49	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	10.33	10.33	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Ruso Date: 9/17/2020 Time (start): 1105 Time (finish): 1140
 smarTroll SN: 597519 Turbidity Meter Type: LaMotte 2020mc SN: 1510-4111
 Weather Conditions: 85°F SUNNY Facility and Unit: Hammond Project No.: GW 6581

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	25.1	4490	4364	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4	4.12	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 8/2021	27	7	7.07	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/2021	26.6	9.95 10	9.95	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19468167 8/2021	26.7	228	214.5	228.9	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	94.6	100.8	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.01	0.01	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	1.47	1.47	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	10.46	10.46	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Heesle Date: 9/15/20 Time (start): 0855 Time (finish): 0930
 smarTroll SN: 646773 Turbidity Meter Type: Lanette 2020w SN: 7009
 Weather Conditions: overcast, 78° 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)	26616025 08/21	23.6°	4490	4371	4490	+/- 5%	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4.00	4.83	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 08/21	24.5°	7.00	7.71	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 08/21	24.7°	10.00	10.52	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	14460167 08/21	24.5	228	228 190.8	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100%	100.5	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	.60	1	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	9.63	9.68	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 9/15/2020 Time (start): 0855 Time (finish): 0935
 smarTroll SN: 597519 Turbidity Meter Type: LaMotte SN: 1510-7111
 Weather Conditions: 75°F overcast Facility and Unit: Hamm 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 8/2021	25.1	4490	4327	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)			4	4.23	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19340057 8/2021	25.5	7	7.14	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	11320182 8/2021	25.6	10	9.93	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	14460167 8/2021	25.4	228	2124	229	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	90.6	99.9	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.01	0.01	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	1.54	1.49	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	10.29	10.29	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH TADKOR

Date: 9-15-2020

Time (start): 08 55

Time (finish): 09 35

SmartTroll SN: 512733

Turbidity Meter Type: Lamotte 200NL

SN: 2049-0413

Weather Conditions: 75°F overcast

Facility and Unit: HAMMOND

Project No: GW 6581

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	24.7	4490	4478	4491	+/- 5 %	Yes No	
pH (4)			4.0	4.17	4.0	+/- 0.1 SU	Yes No	
pH (7)	19340057 08/2021	24.9	7.0	7.06	7.0	+/- 0.1 SU	Yes No	
pH (10)	19320102 08/2021	24.8	10	10.02	10	+/- 0.1 SU	Yes No	
ORP (mV)	19460167 08/2021	24.6	228	224.3	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	88	100%	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0.62	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1	0.99	1	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10	11.32	10	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Kessler

Date: 9/16/20

Time (start): 0700

Time (finish): 0800

SmartTroll SN: 646773

Turbidity Meter Type: Lemna He 2020

SN: 9009

Weather Conditions: cloudy, cool

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)	200016025 08/21	20.9	4490	4454	4400	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4.0	4.84	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	14340057 08/21	21.3	7.0	7.66	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	14320102 08/21	21.5	10.0	10.44	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 08/20 08/21	21.4	+228	196	+228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	94.9	100%	+/- 6 % saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	.07	.07	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	1.66	.62	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	9.02	10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 9/16/2020 Time (start): 0830 Time (finish): 0903
 SmartTroll SN: 597519 Turbidity Meter Type: LAMotte 2020sc SN: 1510-4111
 Weather Conditions: 70°F overcast Facility and Unit: Hammond Project No.: GW6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025	21.9	4490	4410	4490	+/- 5%	<input checked="" type="checkbox"/> No	
pH (4)	8/2021		4	4.25	4	+/- 0.1 SU	<input checked="" type="checkbox"/> No	
pH (7)	19340057 8/2021	22.2	7	7.09	7	+/- 0.1 SU	<input checked="" type="checkbox"/> No	
pH (10)	14320102 8/2021	22.4	10	9.92	10	+/- 0.1 SU	<input checked="" type="checkbox"/> No	
ORP (mV)	19400167 8/2021	22.3	228	217.4	229.2	+/- 20mV	<input checked="" type="checkbox"/> No	
DO (%) (1pt, 100% water saturated air cal)			100	90.3	100.4	+/- 6% saturation	<input checked="" type="checkbox"/> No	
Turbidity 0 NTU			0	0	0	+/- 0.5 NTU	<input checked="" type="checkbox"/> No	
Turbidity 1 NTU			1	1.58	1.46	+/- 0.5 NTU	<input checked="" type="checkbox"/> No	
Turbidity 10 NTU			10	9.82	9.82	+/- 0.5 NTU	<input checked="" type="checkbox"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: VASHISH TAVKOLZ Date: 9-16-2020 Time (start): 0730 Time (finish): 0755
 SmartTroll SN: 512733 Turbidity Meter Type: LAMOTTE 2020WE SN: 2949-0413
 Weather Conditions: 69°F, OVERCAST, WINDY Facility and Unit: HAMMOND Project No: GW 0581

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	21.5	4490	4379	4490	+/- 5 %	Yes No	
pH (4)			4	4.24	4.0	+/- 0.1 SU	Yes No	
pH (7)	19340057 08/21	21.8	7	7.07	7.0	+/- 0.1 SU	Yes No	
pH (10)	19320102 08/21	21.8	10	9.98	10.0	+/- 0.1 SU	Yes No	
ORP (mV)	19460107 08/21	21.3	228	227.6	228	+/- 20mV	Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	90.5	100	+/- 6 % saturation	Yes No	
Turbidity 0 NTU			0	0.06	0	+/- 0.5 NTU	Yes No	
Turbidity 1 NTU			1	1.04	0.87	+/- 0.5 NTU	Yes No	
Turbidity 10 NTU			10	10.22	10.06	+/- 0.5 NTU	Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: JD Date: 9/17/20 Time (start): 0709 Time (finish): 0736
 smarTroll SN: 646773 Turbidity Meter Type: Lumette zero SN: 7009
 Weather Conditions: 68° Light rain Facility and Unit: hammered 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	20.1	4490	4394	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/21		4.0	4.87	4.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	14340057 08/21	20.8	7.0	7.67	7.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	14320102	21.1	10	10.44	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	14460167 08/21	21.2	228	196.5	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100%	95.2	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	1.03	1	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	11.29	11	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 9/17/2020 Time (start): 6820 Time (finish): 0850
 smartTroll SN: 597519 Turbidity Meter Type: Limette 2020wrc SN: 1S10-4111
 Weather Conditions: 70°F overcast Facility and Unit: Hammond Project No: GN6581

Calibration log

	Standard Lot # / Date of Expiration	Temp of Standard (°C)	Value of Standard	Initial Reading	Post-Cal Reading	Acceptable Range	Pass?	Comments
Specific Conductance (µS/cm)	20010025 8/2021	21.5	4490	4377	4410	+/- 5 %	<input checked="" type="checkbox"/> Yes No	
pH (4)			4	4.29	4	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (7)	19340657 8/2021	21.5	7	7.1	7	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	19320102 8/2021	21.5	10	9.89	10	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	19460167 8/2021	21.5	228	210.9	231.1	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	91.8	106.4	+/- 6 % saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0	0.68	0.68	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1	1.73	1.07	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10	6.75	9.9	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: VISHVA TAVKAR

Date: 9-17-2020

Time (start): 07:34

Time (finish): 07:57

smarTroll SN: 512733

Turbidity Meter Type: LAMOTTE 2020NE

SN: 2949-0413

Weather Conditions: 67°F, RAINY

Facility and Unit: HAMMOND

Project No: GW 6581

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)	20010825 8/21	20.4	4420	4364	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.28	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340857 8/21	20.8	7	7.10	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 8/21	20.9	10	10.0	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 8/21	21.0	234	228	234	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	96	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	1.32	1	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.45	10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Therese Vassler

Date: 9/18/20

Time (start): 0719

Time (finish): 0800

SmartTroll SN: 646773

Turbidity Meter Type: Limetech zero

SN: 70004

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: Chad Russo Date: 9/18/2020 Time (start): 0755 Time (finish): 0820
 SmartTroll 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)	20010025 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)	19340057 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)	19460167 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: ASHISH TANKAR Date: 9-18-20 Time (start): 07 25 Time (finish): 07 42
 smarTroll SN: 512 733 Turbidity Meter Type: LaMotte 2020NE SN: 2949-0413
 Weather Conditions: 70F, OVERCAST Facility and Unit: Hammonton Project No.: 6W6581

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	4480	4382	4480	+/- 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: Thomas Kessler Date: 9-21-20 Time (start): 0800 Time (finish): 0825
 SmartTroll SN: 646773 Turbidity Meter Type: lanette 2020 SN: 7009
 Weather Conditions: Sunny, 55° Facility and Unit: hammuel Project No.: 626889

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	13.8	4490	4491	4490	+/- 5%	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/21		4.0	4.91	4.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	19310057 08/21	15.4	7.0	7.61	7.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 08/21	15.6	10.00	10.35	10.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 08/21	15.6	228	205.7	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100%	92.8	100%	+/- 6% saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	1.42	0.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	.61	0.85	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	10.25	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chad Russo Date: 9/21/2020 Time (start): 0640 Time (finish): 0910
 smarTroll SN: 547519 Turbidity Meter Type: Limette 2020mc 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)	20610025 8/20/20	17.9	4490	4441	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.41	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19340057 8/20/21	18.6	7	7.12	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 8/20/21	19	10	9.86	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19466107 8/20/21	19.1	228	196	231.3	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	95.2	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	0.38	1.1	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	9.5	9.5	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: VISHAY TROLL

Date: 9-21-20

Time (start): 08 28

Time (finish): 08 42

smarTroll SN: 512 733

Turbidity Meter Type: LANOTTE 2020WE

SN: 2949-0413

Weather Conditions: 55°F, SUNNY

Facility and Unit: HAMMON

Project No.: GW 0581

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	15.4°	4490	4315	4490	+/- 5 %	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (4)	08/21		4	4.37	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (7)	10340057 8/21	16.5	7	7.12	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
pH (10)	19320102 8/21	16.8	10	9.96	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
ORP (mV)	19460167 8/21	17.1	228	226.7	228	+/- 20mV	<input checked="" type="radio"/> Yes <input type="radio"/> No	
DO (%) (1pt, 100% water saturated air cal)			100%	90.3	100	+/- 6 % saturation	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 0 NTU			0	0.10	0	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 1 NTU			1	1.05	1	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Turbidity 10 NTU			10	9.76	10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes <input type="radio"/> No	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Hesse Date: 9/23/20 Time (start): 0700 Time (finish): 0750
 smarTroll SN: 646775 Turbidity Meter Type: lanette zero SN: 7009
 Weather Conditions: Sunny 60° Facility and Unit: Hammond Project No: 6065896581

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	19°	4440	4380	4490	+/- 5%	<input checked="" type="radio"/> Yes No	
pH (4)			4.0	4.91	4.0	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	14340057 08/21	19°	7.0	7.62	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	14320102 08/21	19.3	10.00	10.44	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	14460167 08/21	18.8	228	196.9	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	92.3	100	+/- 6% saturation	<input checked="" type="radio"/> Yes No	
Turbidity 0 NTU			0	0.07	0.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 1 NTU			1	.98	1.06	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	11.16	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: Chyd Russo Date: 9/23/2020 Time (start): 0730 Time (finish): 0800
 smartTroll SN: 597519 Turbidity Meter Type: LaMotte 2020wc SN: 1516-4111
 Weather Conditions: 60°F clear 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)	20510025 8/2021	20.2	4490	4368	4490	+/- 5%	<input checked="" type="radio"/> Yes No	
pH (4)			4	4.43	4	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	19390057 8/2021	19.6	7	7.11	7	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 8/2021	19.8	10	9.88	10	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	19460167 8/2021	19.6	228	203.8	235.9	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	90.5	99.4	+/- 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	1.10	1.10	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	10.06	10.06	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

EQUIPMENT CALIBRATION LOG

Field Technician: WISHISH TAVOKE Date: 9-23-20 Time (start): 0725 Time (finish): 0745
 SmartTroll SN: 512733 Turbidity Meter Type: LIHUTE 2020W6 SN: 2949-0413
 Weather Conditions: 55°F, CLEAR Facility and Unit: HAMMOND Project No.: 606581

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	17.5	4490	4461	4490	+/- 5 %	<input checked="" type="radio"/> Yes No	
pH (4)	8/21	18.4	4	4.04	4.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (7)	93 40057 8/21	18.8	7	7.12	7.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	93 20102 8/21	18.9	10	10.04	10.00	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
ORP (mV)	194 60167 8/21	18.5	228	238	228	+/- 20mV	<input checked="" type="radio"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100	93.7	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	1.12	1.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	
Turbidity 10 NTU			10	9.55	10.00	+/- 0.5 NTU	<input checked="" type="radio"/> Yes No	

VT 9-23-20

EQUIPMENT CALIBRATION LOG

Field Technician: Shawn LTY Date: 11/10/2020 Time (start): 11:55 Time (finish): 12:15
 SmartTroll 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: 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 2.60	+/- 0.1 SU	<input checked="" type="radio"/> Yes No	
pH (10)	19320102 08/21	20.66°	10	10.15	10.04 10.60	+/- 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 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 Kusler

Date: 11/11/20

Time (start): 745

Time (finish): 0815

smarTroll SN: 728550

Turbidity Meter Type: Lanette 2020ac

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)	1946667	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	

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/We 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)	#1944037 08/2021	8.48	7.00	7.00	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	

EQUIPMENT CALIBRATION LOG

Field Technician: Thomas Messler Date: 12/15/20 Time (start): 826 Time (finish): 0850
 SmartTroll SN: 728634 Turbidity Meter Type: Lumette 2020w SN: 14179-4011
 Weather Conditions: Sunny, cold Facility and Unit: Plant Hammond Project No.: 6W6581

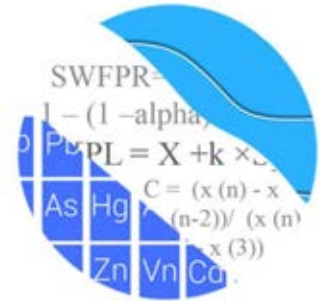
Calibration log

	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	11.26	4490	4784	4490	+/- 5%	<input checked="" type="checkbox"/> Yes No	
pH (4)	08121		4.0	4.00	4.00	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (7)	19340057	10.67	7.00	7.13	7.00	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
pH (10)	19320102	9.62	10.00	10.22	10.00	+/- 0.1 SU	<input checked="" type="checkbox"/> Yes No	
ORP (mV)	19460167	8.94	228	246	228	+/- 20mV	<input checked="" type="checkbox"/> Yes No	
DO (%) (1pt, 100% water saturated air cal)			100%	101.75%	100%	+/- 6% saturation	<input checked="" type="checkbox"/> Yes No	
Turbidity 0 NTU			0	0.03	0.03	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 1 NTU			1	1.08	1.03	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	
Turbidity 10 NTU			10	10.16	9.71	+/- 0.5 NTU	<input checked="" type="checkbox"/> Yes No	

APPENDIX F

Statistical Analysis Packages

GROUNDWATER STATS CONSULTING



August 26, 2020

Southern Company Services
Attn: Ms. Kristen Jurinko
241 Ralph McGill Blvd NE, Bin 10160
Atlanta, Georgia 30308

Re: Plant Hammond Ash Pond 2 (AP-2)
Statistical Analysis – March 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 March 2020 quality for Georgia Power Company's Plant Hammond AP-2. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015), the Georgia Environmental Protection Division Rules for Solid Waste Management Chapter 391-3-4-.10 and follows the USEPA Unified Guidance (2009).

Sampling began for the CCR program in 2016, and at least 8 background samples have been collected at each of the groundwater monitoring wells. The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient well:** HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, HGWA-6
- **Downgradient wells:** HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Additionally, sampling began in March 2019 for the majority of the following delineation wells and piezometers, which are analyzed in an addendum report. Exceptions to this include piezometer MW-33 where sampling began in January 2020. The results of those findings are discussed in the Groundwater Monitoring Report prepared by Geosyntec:

- **Delineation wells & Piezometers:** MW-21D, MW-22, MW-23D, MW-33

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting. The statistical analysis was performed according to the groundwater data screening that was performed in April 2018 by GSC and approved by Dr. Cameron, PhD Statistician with MacStat Consulting and primary author of the USEPA Unified Guidance.

The CCR program consists of the following constituents:

- **Appendix III** (Detection Monitoring) - boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) – antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Note that when there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. A summary of well/constituent pairs with 100% nondetects follows this letter. A substitution of the most recent reporting limit is used for nondetect data. Additionally, the following constituents did not require statistical analyses due to no detections above the reporting limit: antimony and mercury.

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. No values were flagged as outliers (Figure C).

In earlier analyses, data at all wells were evaluated for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix III parameters based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves were provided 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:

- Interwell Prediction Limits combined with 1-of-2 resamples for: boron, calcium, chloride, fluoride, pH, sulfate, and TDS

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are nondetects, a nonparametric test is utilized. While the false positive rate associated with the parametric limits is based on an annual 10% (5% per semi-annual event) as recommended by the EPA Unified Guidance (2009), the false positive rate associated with the nonparametric limits is dependent upon the available background sample size, number of future comparisons, and verification resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits.

- No statistical analyses are required on wells and analytes containing 100% nondetects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% nondetects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for nondetects is the practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% nondetects, the Kaplan-Meier nondetect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% nondetects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the interwell case, prediction limits are updated with upgradient well data during each event after careful screening for any new outliers. In 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.

Statistical Evaluation of Appendix III Parameters – March 2020

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed for all Appendix III parameters using all historical upgradient well data through March 2020 (Figure D). Downgradient measurements were compared to these interwell background limits. Interwell prediction limits use all available upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs).

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When the resample confirms the initial exceedance, a statistically significant increase (SSI) is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result and, therefore, no further action is necessary. If no resample is collected, the initial exceedance is automatically confirmed.

When the March 2020 compliance data from downgradient wells were compared to interwell prediction limits, several exceedances were noted. A summary table of these findings is provided along with the prediction limits (Figure D).

When prediction limit exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable (Figure E). Upgradient well data are included in the trend analyses for all parameters found to exceed their prediction limit in downgradient wells to identify whether similar patterns exist upgradient of the site which is an indication of natural variability in groundwater unrelated to practices at the site. A summary of the trend test results follows this letter. Statistically significant trends were noted for the following well/constituent pairs:

Increasing trends:

- Boron: HGWC-16
- Calcium: HGWC-15, HGWC-16, HGWC-17
- Chloride: HGWC-16, HGWC-17
- Sulfate: HGWA-3 (upgradient)
- TDS: HGWC-16, HGWC-17

Decreasing trends:

- Chloride: HGWA-4 (upgradient), HGWC-14

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits will be necessary to accommodate these types of changes. In the interwell case, newer data will be included in background following each event, provided that upgradient well data are reviewed for outliers and trending data. In some cases, the earlier portion of data may require deselecting prior to construction of limits in order to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Statistical Evaluation of Appendix IV Parameters – March 2020

Interwell tolerance limits were used to calculate the site-specific background limits from pooled upgradient well data for Appendix IV constituents (Figure F). When varying detection limits were present in upgradient wells, all nondetects are substituted with the most recent reporting limit. In the case of lithium, the historical reporting limit was 0.05 mg/L which is higher than the CCR-rule specified level of 0.04 mg/L. Therefore, all nondetects were substituted with 0.03 mg/L. Parametric tolerance limits are used when data follow a normal or transformed-normal distribution such as for barium, fluoride, molybdenum and combined radium226 + 228. When data contained greater than 50% nondetects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The background limits were then used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia EPD Rule 391-3-4-.10(6)(a) (Figure G).

As described in 40 CFR §257.95(h) (1-3), the GWPS is:

- The maximum contaminant level (MCL) established under §141.62 and §141.66 of this title
- Where an MCL has not been established for a constituent, CCR-rule specified levels have been specified for cobalt (0.006 mg/L), lead (0.015 mg/L), lithium (0.040 mg/L), and molybdenum (0.100 mg/L)
- The respective background level for a constituent when the background level is higher than the MCL or Federal CCR Rule identified GWPS

On July 30, 2018, USEPA revised the Federal CCR Rule updating GWPS for cobalt, lead, lithium, and molybdenum as described above in 40 CFR §257.95(h)(2). Georgia EPD has

not incorporated the updated GWPS into the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, for sites regulated under Georgia EPD Rules, the GWPS is:

- The MCL or
- The background concentration when an MCL is not established or when the background concentration is higher than the MCL.

Following the above Georgia EPD Rule requirements and the CCR Rule, State and Federal GWPS were established for statistical comparison of Appendix IV constituents for the March 2020 sample event (Figure G).

To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV constituents in each downgradient well for the State and Federal requirements (Figures H and I, respectively). The Sanitas software was used to calculate the tolerance limits and the confidence intervals. The confidence intervals for the State were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a), and the confidence intervals for the Federal were prepared according to the CCR Rule. Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. If there is an exceedance of the GWPS, a statistically significant level (SSL) exceedance is identified. A summary of the confidence intervals follows this letter.

The following confidence interval exceedances were identified:

State

- Cobalt: HGWC-18

Federal

- Cobalt: HGWC-18

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for Hammond AP-2. If you have any questions or comments, please feel free to contact me.

For Groundwater Stats Consulting,



Kristina L. Rayner
Groundwater Statistician

100% Nondetects

Date: 6/4/2020 11:38 AM

Plant Hammond Client: Southern Company Data: Hammond AP-2

Antimony (mg/L)

HGWA-2, HGWA-4, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Arsenic (mg/L)

HGWA-4, HGWA-6

Beryllium (mg/L)

HGWA-1, HGWA-3, HGWA-5, HGWA-6, HGWC-15, HGWC-16, HGWC-17

Cadmium (mg/L)

HGWA-1, HGWA-3, HGWA-4, HGWA-5, HGWA-6, HGWC-16

Cobalt (mg/L)

HGWA-3, HGWA-6

Lithium (mg/L)

HGWC-14

Mercury (mg/L)

HGWA-3, HGWA-5, HGWC-14, HGWC-15, HGWC-16, HGWC-17

Molybdenum (mg/L)

HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, HGWC-14, HGWC-16, HGWC-17, HGWC-18

Selenium (mg/L)

HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-6

Thallium (mg/L)

HGWA-1, HGWA-3, HGWA-4, HGWA-5, HGWC-15, HGWC-16

Interwell Prediction Limit Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:05 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-15	0.04409	n/a	3/26/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-16	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-17	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-18	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-14	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-15	128.9	n/a	3/26/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-16	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-17	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-18	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	3/26/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.69	4.9	3/30/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.69	4.9	3/31/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.36	n/a	3/31/2020	Yes	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	3/26/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	425	n/a	3/26/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Interwell Prediction Limit Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:05 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-15	0.04409	n/a	3/26/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-16	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-17	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-18	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-14	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-15	128.9	n/a	3/26/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-16	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-17	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-18	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	3/26/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.69	4.9	3/30/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-15	7.69	4.9	3/26/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-16	7.69	4.9	3/30/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-17	7.69	4.9	3/31/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.69	4.9	3/31/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-14	0.36	n/a	3/30/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-15	0.36	n/a	3/26/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-16	0.36	n/a	3/30/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-17	0.36	n/a	3/31/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.36	n/a	3/31/2020	Yes	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	3/26/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	425	n/a	3/26/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Trend Test Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

<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-16	0.2753	55	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	17.5	53	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	15.21	66	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	35.54	56	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-115.1	-52	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	14.55	83	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	20.15	59	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.9	63	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	96.37	70	48	Yes	14	7.143	n/a	n/a	0.01	NP

Trend Test Summary -All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	0.0007668	9	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-2 (bg)	0.001791	45	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-3 (bg)	-0.0007135	-19	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-4 (bg)	-0.001746	-37	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-5 (bg)	-0.0004406	-14	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-6 (bg)	-0.001046	-21	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-14	-0.2096	-5	-48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-15	0.1514	41	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-16	0.2753	55	48	Yes	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-17	0.3065	30	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-18	-0.0127	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-1 (bg)	6.687	43	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-2 (bg)	-0.1393	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-3 (bg)	3.531	39	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-4 (bg)	-7.131	-29	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-5 (bg)	-0.6566	-14	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-6 (bg)	0.6134	15	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-14	-5.896	-7	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	17.5	53	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	15.21	66	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	35.54	56	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-18	16.36	31	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-1 (bg)	1.469	22	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-2 (bg)	-0.1372	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-3 (bg)	0	-4	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-5 (bg)	-0.09359	-18	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-6 (bg)	-0.05984	-20	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-115.1	-52	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-15	-21.33	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	14.55	83	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	20.15	59	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-18	-29.64	-33	-48	No	14	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-1 (bg)	-0.04693	-50	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-2 (bg)	-0.054	-32	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-3 (bg)	-0.009832	-11	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.2248	-59	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-5 (bg)	-0.04139	-35	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-6 (bg)	-0.02795	-29	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-14	0.04005	42	63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-18	-0.03755	-48	-63	No	17	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-1 (bg)	-0.002837	-12	-63	No	17	11.76	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-2 (bg)	0	29	63	No	17	58.82	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-3 (bg)	0.04945	43	63	No	17	35.29	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-4 (bg)	0.03355	49	63	No	17	52.94	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-5 (bg)	-0.003266	-16	-63	No	17	11.76	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-6 (bg)	0.03185	42	63	No	17	35.29	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-18	0.009528	7	63	No	17	5.882	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-1 (bg)	8.572	44	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-2 (bg)	1.136	35	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-4 (bg)	-0.7339	-37	-48	No	14	14.29	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-5 (bg)	-0.1282	-8	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-6 (bg)	0.5503	22	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-14	88.31	32	48	No	14	0	n/a	n/a	0.01	NP

Trend Test Summary -All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

<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>
Sulfate (mg/L)	HGWC-15	32.25	24	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-16	1.071	21	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-17	49.32	42	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-18	26.39	30	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	19.47	27	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-3.376	-14	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	2.137	9	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-4 (bg)	-29.52	-34	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-5 (bg)	-5.489	-26	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-6 (bg)	2.317	20	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-14	-238.3	-48	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-15	-35.1	-16	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.9	63	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	96.37	70	48	Yes	14	7.143	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-18	0	0	48	No	14	0	n/a	n/a	0.01	NP

Tolerance Limit Summary Table - Appendix IV

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/7/2020, 12:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	69	n/a	n/a	94.2	n/a	n/a	0.02904	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	96	n/a	n/a	79.17	n/a	n/a	0.007269	NP Inter(NDs)
Barium (mg/L)	n/a	0.22	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	84	n/a	n/a	83.33	n/a	n/a	0.01345	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	96	n/a	n/a	92.71	n/a	n/a	0.007269	NP Inter(NDs)
Chromium (mg/L)	n/a	0.019	84	n/a	n/a	86.9	n/a	n/a	0.01345	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	96	n/a	n/a	67.71	n/a	n/a	0.007269	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	4.36	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Fluoride (mg/L)	n/a	0.36	102	n/a	n/a	34.31	n/a	n/a	0.005343	NP Inter(normality)
Lead (mg/L)	n/a	0.005	84	n/a	n/a	80.95	n/a	n/a	0.01345	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	96	n/a	n/a	27.08	n/a	n/a	0.007269	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	66	n/a	n/a	87.88	n/a	n/a	0.03387	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	84	n/a	n/a	97.62	n/a	n/a	0.01345	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	96	n/a	n/a	98.96	n/a	n/a	0.007269	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	96	n/a	n/a	97.92	n/a	n/a	0.007269	NP Inter(NDs)

PLANT HAMMOND AP-2 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.01
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

PLANT HAMMOND AP-2 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

*MCL = Maximum Contaminant Level

*CCR = Coal Combustion Residuals

*GWPS = Groundwater Protection Standard

State Confidence Interval Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.

State Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006053	0.003982	0.01	No 16	0.005017	0.001592	12.5	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 16	0.004146	0.001839	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 16	0.004169	0.001797	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.0008	0.01	No 16	0.003948	0.001883	75	None	No	0.01	NP (normality)
Arsenic (mg/L)	HGWC-18	0.006903	0.004414	0.01	No 16	0.005659	0.001913	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0238	0.019	2	No 16	0.02581	0.01989	6.25	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.03059	0.02137	2	No 16	0.02598	0.007082	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1128	0.09802	2	No 16	0.1054	0.01133	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0222	2	No 16	0.02484	0.002548	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0346	0.028	2	No 16	0.03476	0.01776	6.25	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 14	0.0008357	0.0009204	14.29	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.003386	0.002825	0.004	No 14	0.003106	0.0003963	7.143	None	No	0.01	Param.
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 16	0.001015	0.001189	37.5	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002433	0.001632	0.005	No 16	0.002057	0.0006788	0	None	sqrt(x)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 16	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 16	0.002348	0.0006075	93.75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002461	0.002064	0.005	No 16	0.002262	0.0003052	6.25	None	No	0.01	Param.
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 14	0.008649	0.003436	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 14	0.008636	0.003466	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 14	0.008086	0.003819	78.57	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 14	0.009414	0.002192	92.86	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.0005	0.1	No 14	0.008636	0.003468	85.71	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02799	0.02334	0.038	No 16	0.02485	0.005897	6.25	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05047	0.0331	0.038	No 16	0.04179	0.01335	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 16	0.004416	0.001597	87.5	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01647	0.01509	0.038	No 16	0.01578	0.001056	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.657	1.162	5	No 16	1.409	0.3803	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.9032	0.4358	5	No 16	0.6695	0.3592	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.052	0.52	5	No 16	0.7859	0.4088	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.107	0.691	5	No 16	0.899	0.3197	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.395	1.825	5	No 16	2.11	0.4386	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3427	0.1379	4	No 17	0.2403	0.1635	17.65	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.31	0.09	4	No 17	0.2271	0.137	35.29	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-16	0.42	0.23	4	No 17	0.261	0.1194	47.06	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-17	0.42	0.081	4	No 17	0.2777	0.2173	41.18	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-18	0.6738	0.4309	4	No 17	0.5524	0.1938	5.882	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0014	0.005	No 14	0.001851	0.0009337	7.143	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.005	No 14	0.003316	0.002355	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.005	No 14	0.002914	0.0025	57.14	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000089	0.005	No 14	0.003248	0.002439	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.005	No 14	0.001646	0.0009815	7.143	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.03	No 16	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0013	0.03	No 16	0.01305	0.01369	37.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0041	0.0028	0.03	No 16	0.004962	0.006706	6.25	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.03	No 16	0.01913	0.01449	62.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01494	0.01231	0.03	No 16	0.01363	0.002015	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.01	No 14	0.009336	0.002486	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)

State Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium (mg/L)	HGWC-14	0.01423	0.006809	0.05	No	16	0.01052	0.005702	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0016	0.05	No	16	0.007944	0.003751	75	None	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No	16	0.009381	0.002478	93.75	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No	16	0.008362	0.003545	81.25	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03276	0.01722	0.05	No	16	0.02499	0.01194	6.25	None	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No	16	0.0002979	0.00002985	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No	16	0.0006125	0.0004539	56.25	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No	16	0.0005319	0.0004269	43.75	None	No	0.01	NP (normality)

Federal Confidence Interval Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.

Federal Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006053	0.003982	0.01	No 16	0.005017	0.001592	12.5	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 16	0.004146	0.001839	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 16	0.004169	0.001797	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.0008	0.01	No 16	0.003948	0.001883	75	None	No	0.01	NP (normality)
Arsenic (mg/L)	HGWC-18	0.006903	0.004414	0.01	No 16	0.005659	0.001913	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0238	0.019	2	No 16	0.02581	0.01989	6.25	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.03059	0.02137	2	No 16	0.02598	0.007082	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1128	0.09802	2	No 16	0.1054	0.01133	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0222	2	No 16	0.02484	0.002548	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0346	0.028	2	No 16	0.03476	0.01776	6.25	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 14	0.0008357	0.0009204	14.29	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.003386	0.002825	0.004	No 14	0.003106	0.0003963	7.143	None	No	0.01	Param.
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 16	0.001015	0.001189	37.5	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002433	0.001632	0.005	No 16	0.002057	0.0006788	0	None	sqrt(x)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 16	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 16	0.002348	0.0006075	93.75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002461	0.002064	0.005	No 16	0.002262	0.0003052	6.25	None	No	0.01	Param.
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 14	0.008649	0.003436	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 14	0.008636	0.003466	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 14	0.008086	0.003819	78.57	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 14	0.009414	0.002192	92.86	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.0005	0.1	No 14	0.008636	0.003468	85.71	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02799	0.02334	0.038	No 16	0.02485	0.005897	6.25	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05047	0.0331	0.038	No 16	0.04179	0.01335	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 16	0.004416	0.001597	87.5	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01647	0.01509	0.038	No 16	0.01578	0.001056	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.657	1.162	5	No 16	1.409	0.3803	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.9032	0.4358	5	No 16	0.6695	0.3592	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.052	0.52	5	No 16	0.7859	0.4088	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.107	0.691	5	No 16	0.899	0.3197	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.395	1.825	5	No 16	2.11	0.4386	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3427	0.1379	4	No 17	0.2403	0.1635	17.65	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.31	0.09	4	No 17	0.2271	0.137	35.29	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-16	0.42	0.23	4	No 17	0.261	0.1194	47.06	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-17	0.42	0.081	4	No 17	0.2777	0.2173	41.18	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-18	0.6738	0.4309	4	No 17	0.5524	0.1938	5.882	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0014	0.015	No 14	0.001851	0.0009337	7.143	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.015	No 14	0.003316	0.002355	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.015	No 14	0.002914	0.0025	57.14	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000089	0.015	No 14	0.003248	0.002439	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.015	No 14	0.001646	0.0009815	7.143	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.04	No 16	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0013	0.04	No 16	0.01305	0.01369	37.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0041	0.0028	0.04	No 16	0.004962	0.006706	6.25	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.04	No 16	0.01913	0.01449	62.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01494	0.01231	0.04	No 16	0.01363	0.002015	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.1	No 14	0.009336	0.002486	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)

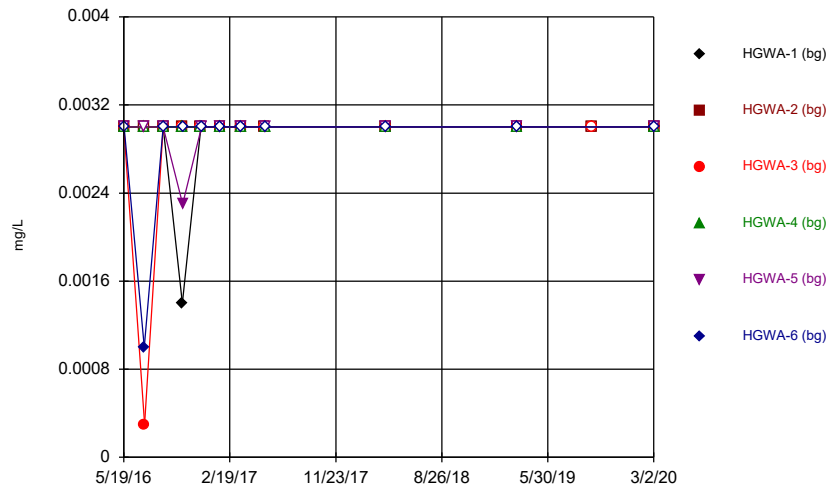
Federal Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium (mg/L)	HGWC-14	0.01423	0.006809	0.05	No 16	0.01052	0.005702	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0016	0.05	No 16	0.007944	0.003751	75	None	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No 16	0.009381	0.002478	93.75	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No 16	0.008362	0.003545	81.25	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03276	0.01722	0.05	No 16	0.02499	0.01194	6.25	None	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No 16	0.0002979	0.00002985	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No 16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No 16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No 16	0.0006125	0.0004539	56.25	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No 16	0.0005319	0.0004269	43.75	None	No	0.01	NP (normality)

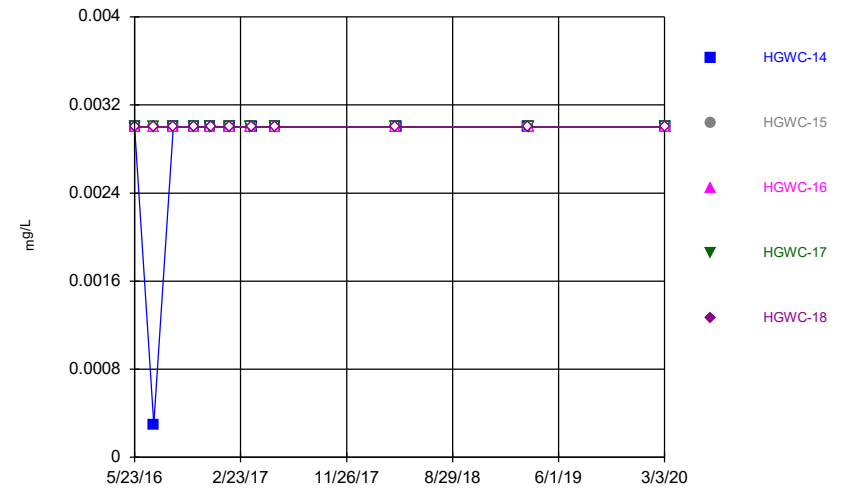
FIGURE A.

Time Series



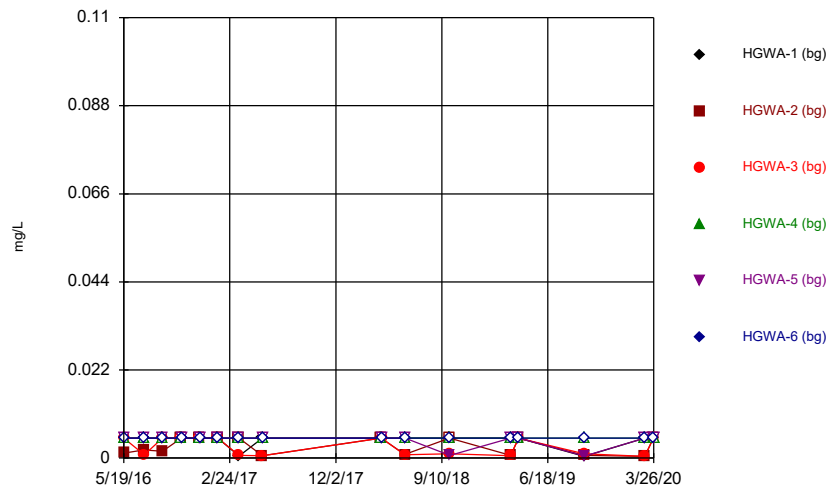
Constituent: Antimony Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



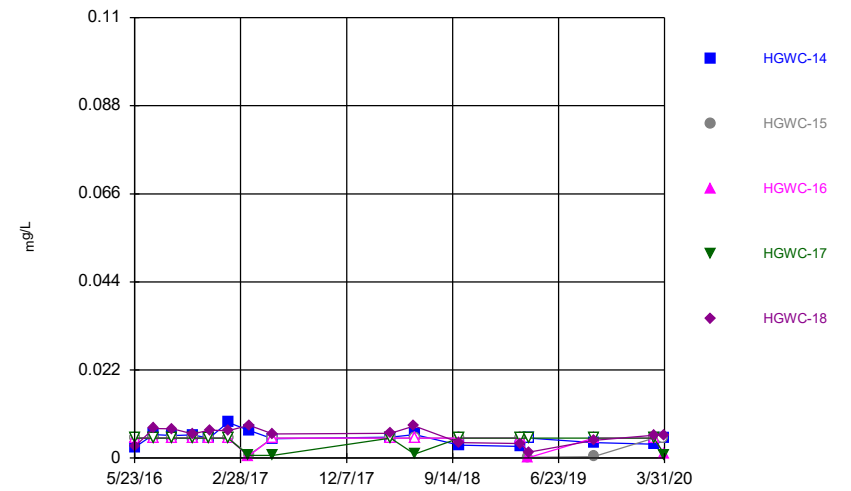
Constituent: Antimony Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



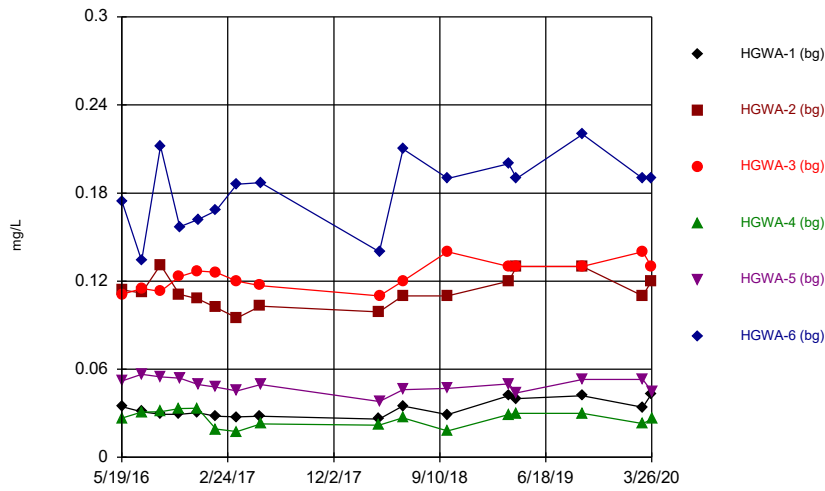
Constituent: Arsenic Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Arsenic Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

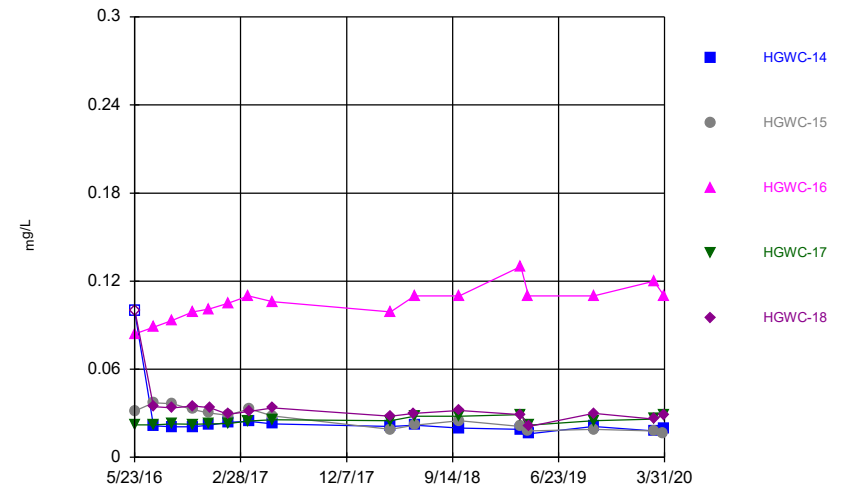
Time Series



Constituent: Barium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

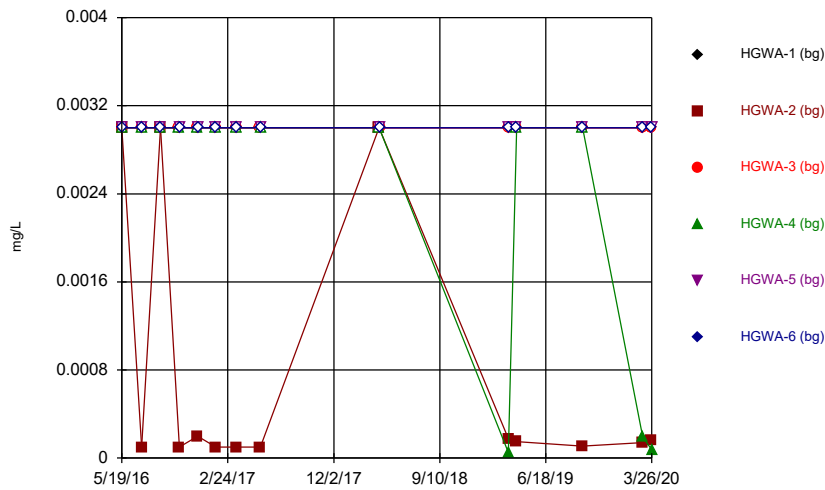
Time Series



Constituent: Barium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

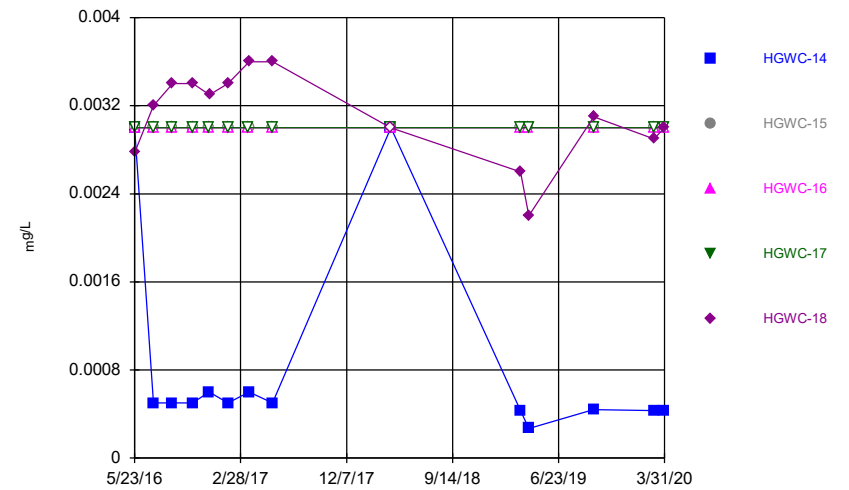
Time Series



Constituent: Beryllium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

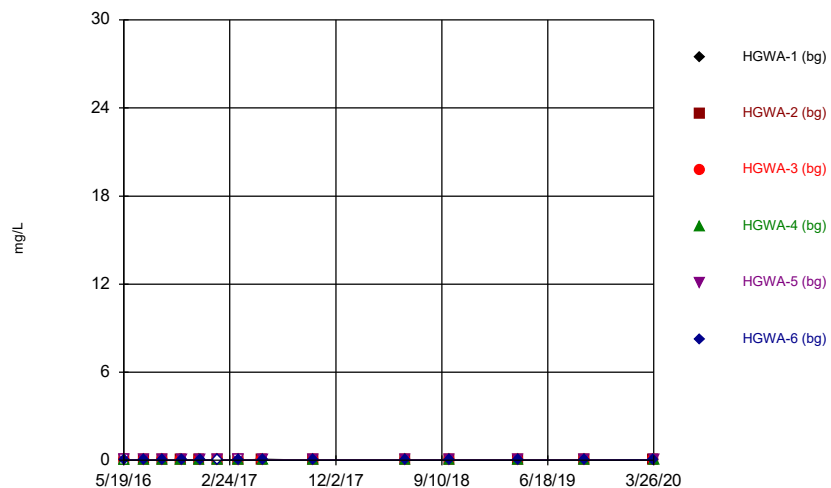
Hollow symbols indicate censored values.

Time Series



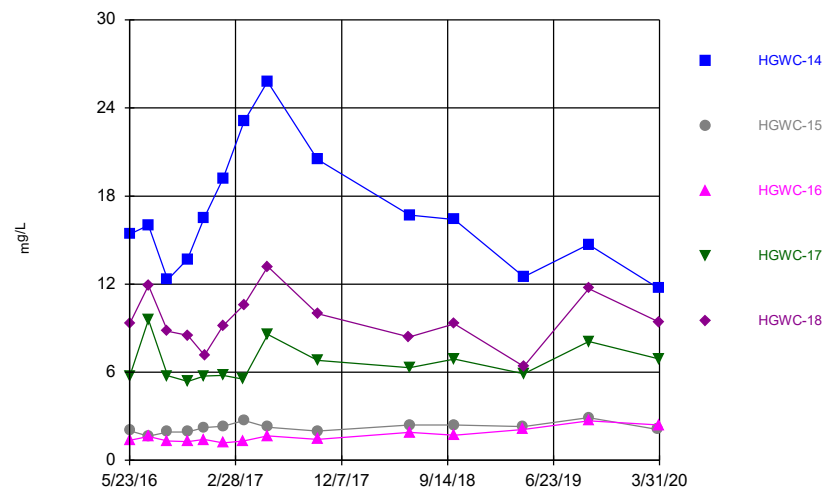
Constituent: Beryllium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



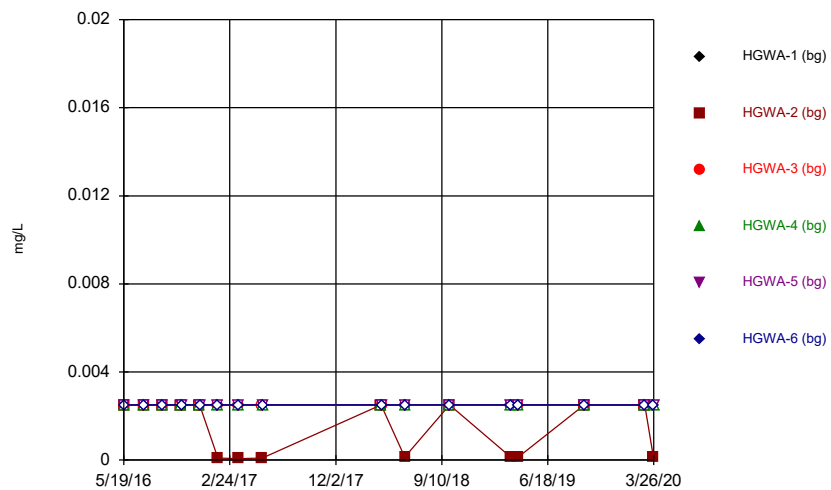
Constituent: Boron Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



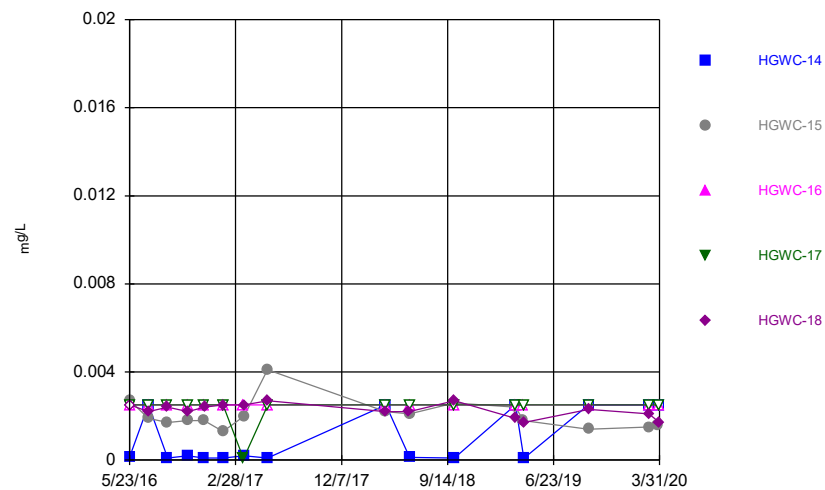
Constituent: Boron Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



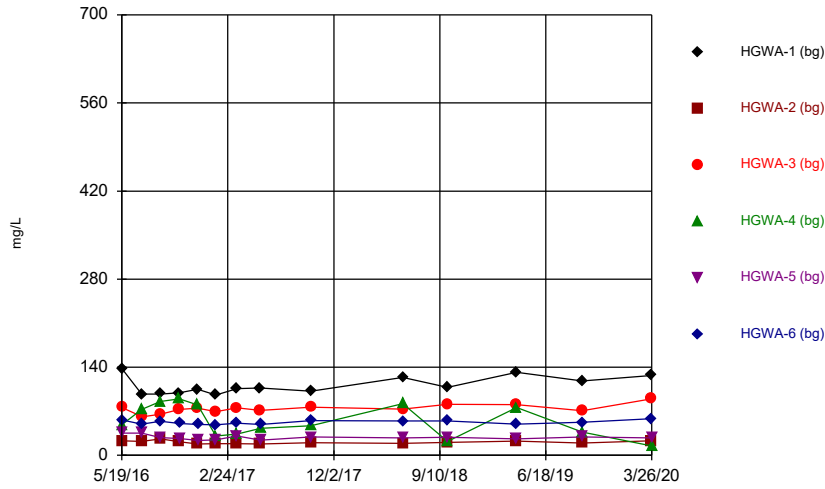
Constituent: Cadmium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



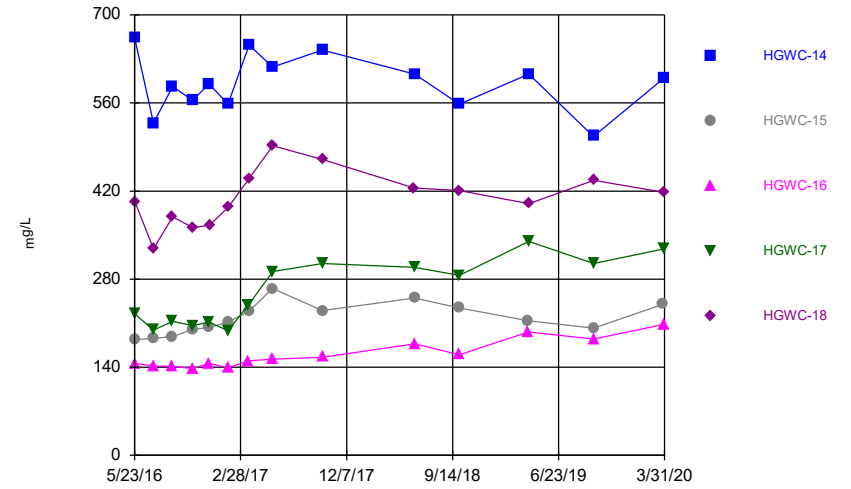
Constituent: Cadmium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



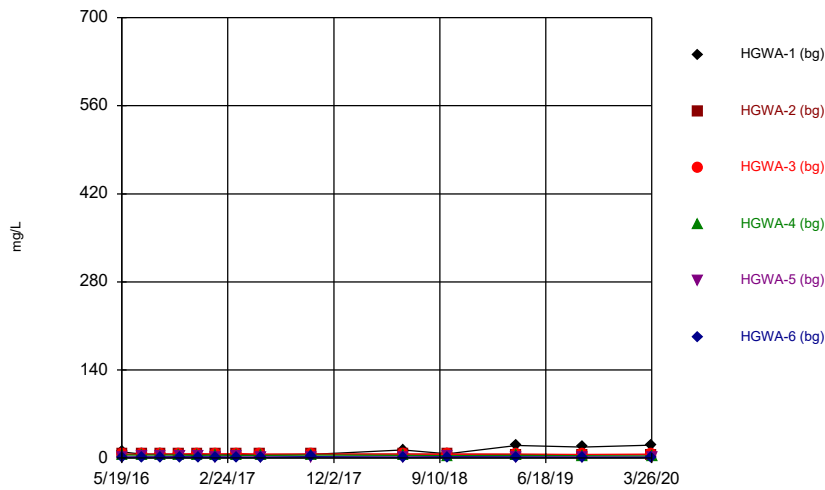
Constituent: Calcium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



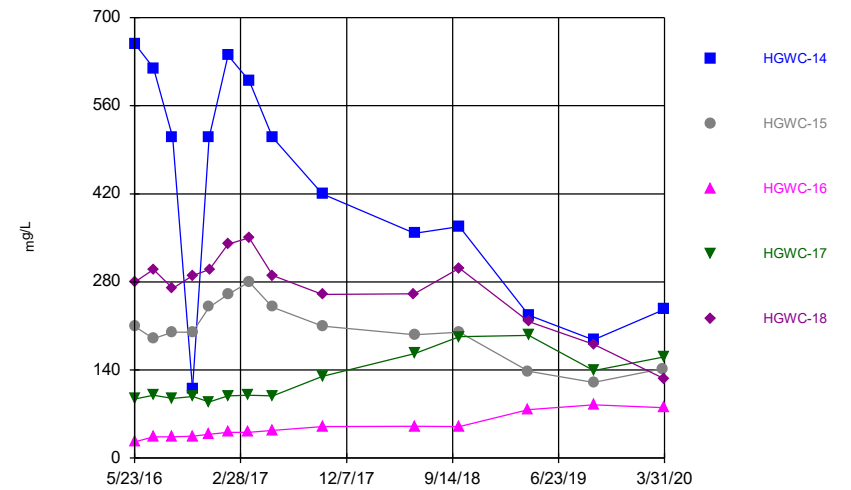
Constituent: Calcium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



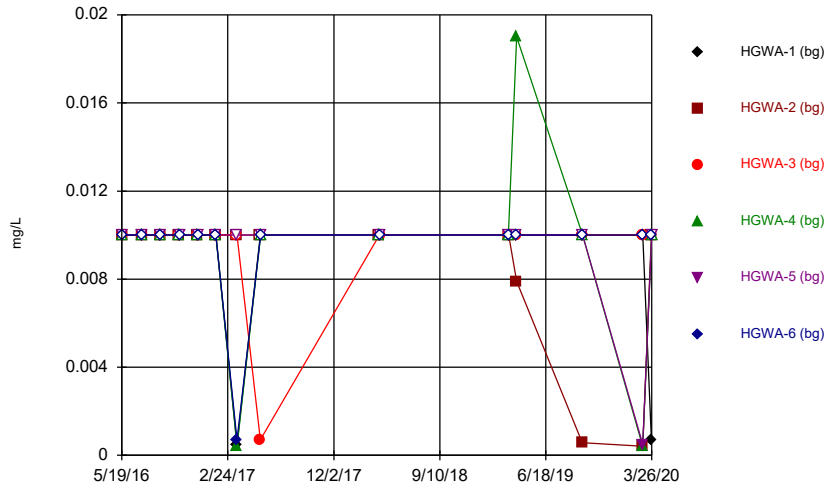
Constituent: Chloride Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



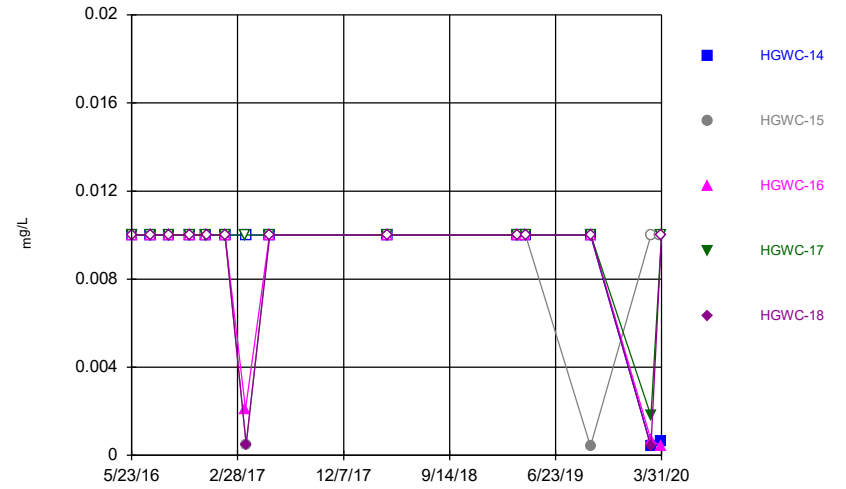
Constituent: Chloride Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



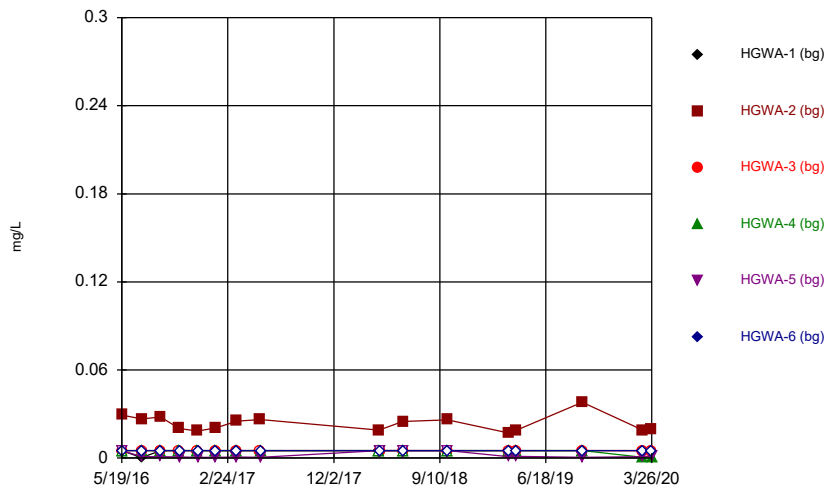
Constituent: Chromium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



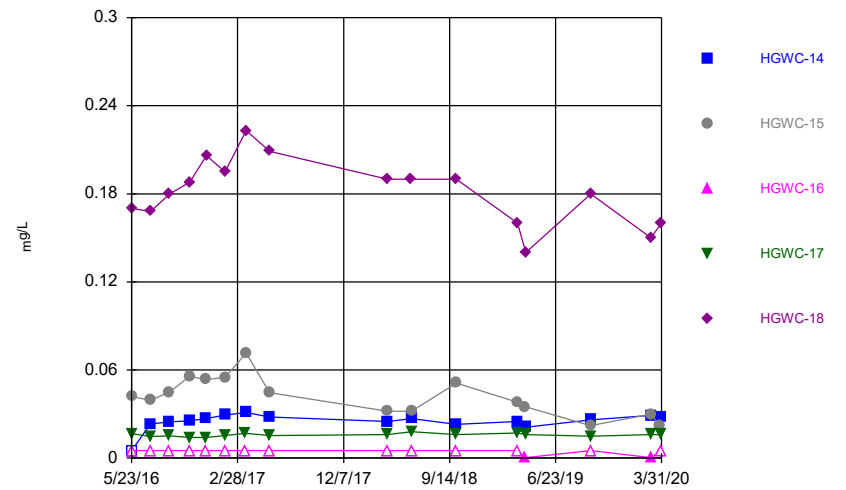
Constituent: Chromium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



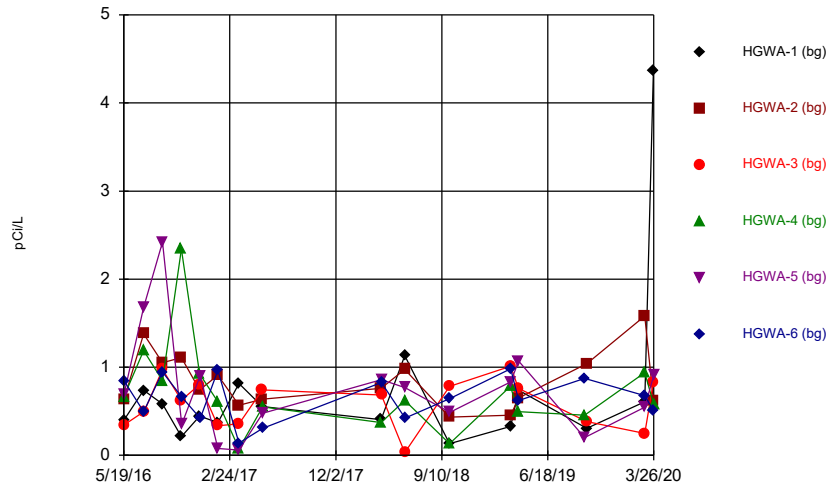
Constituent: Cobalt Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



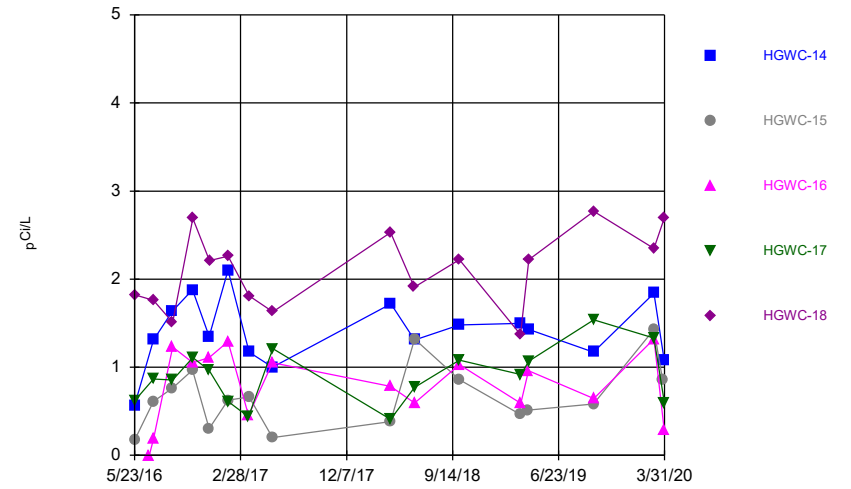
Constituent: Cobalt Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



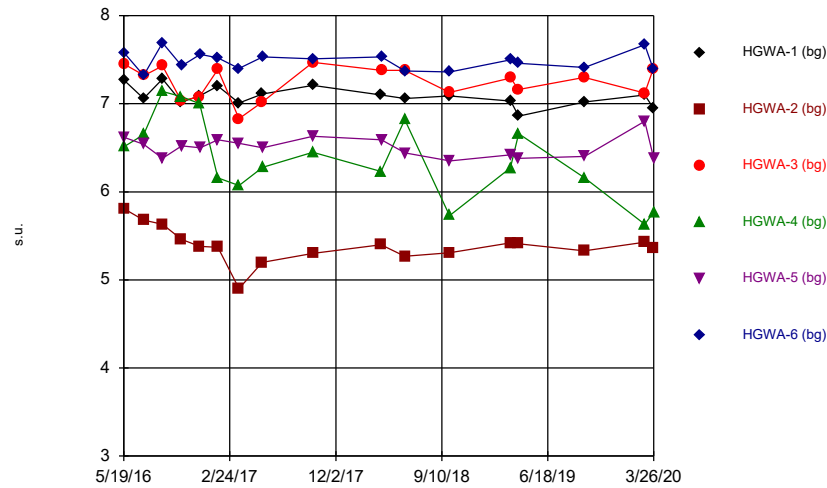
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



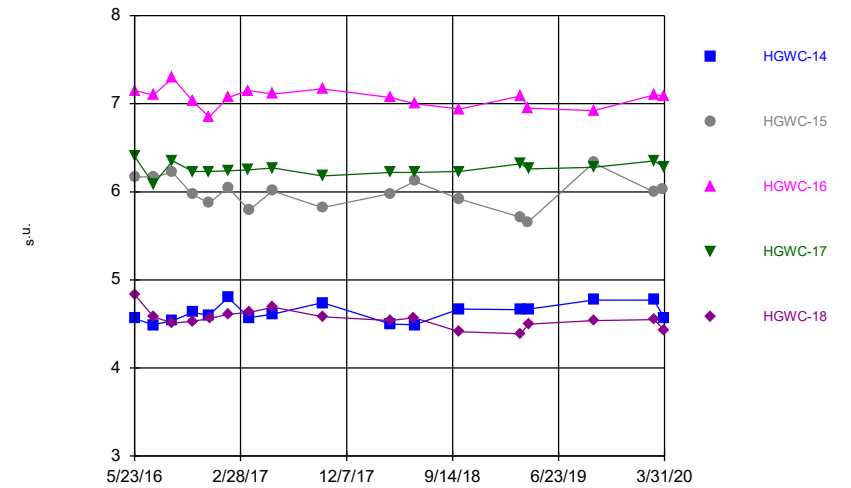
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



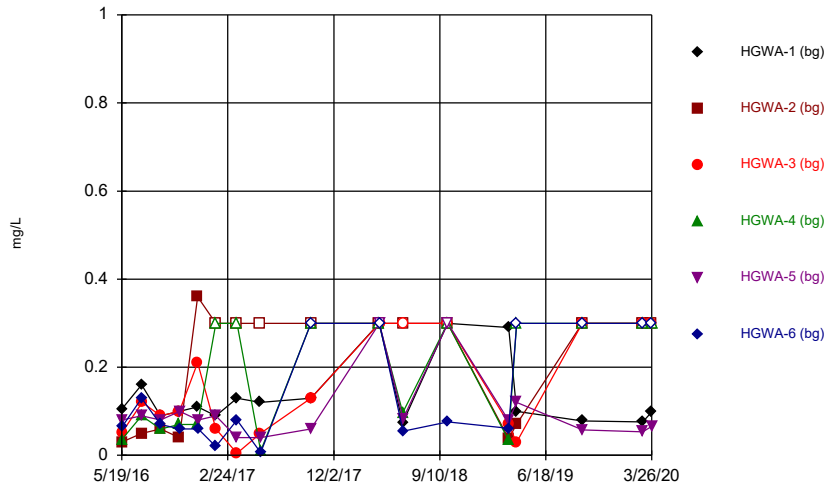
Constituent: Field pH Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



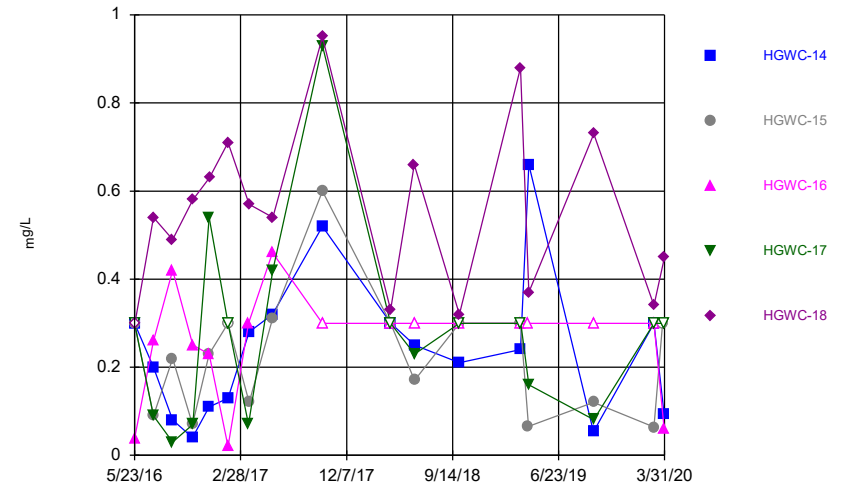
Constituent: Field pH Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



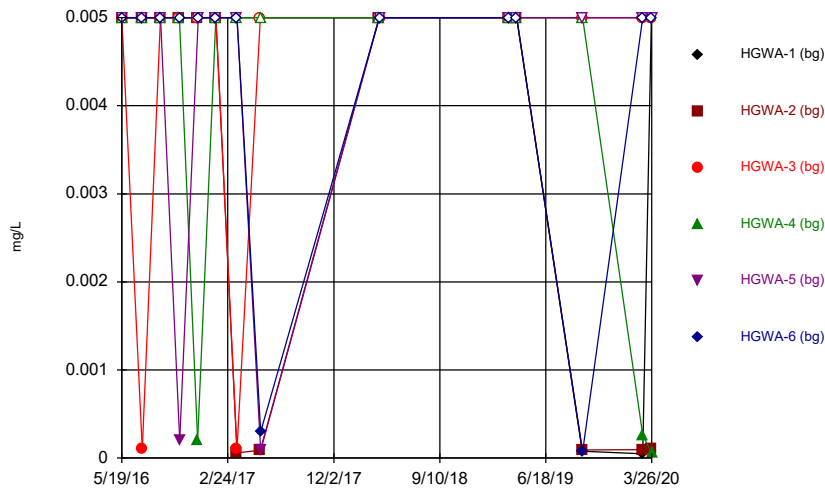
Constituent: Fluoride Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



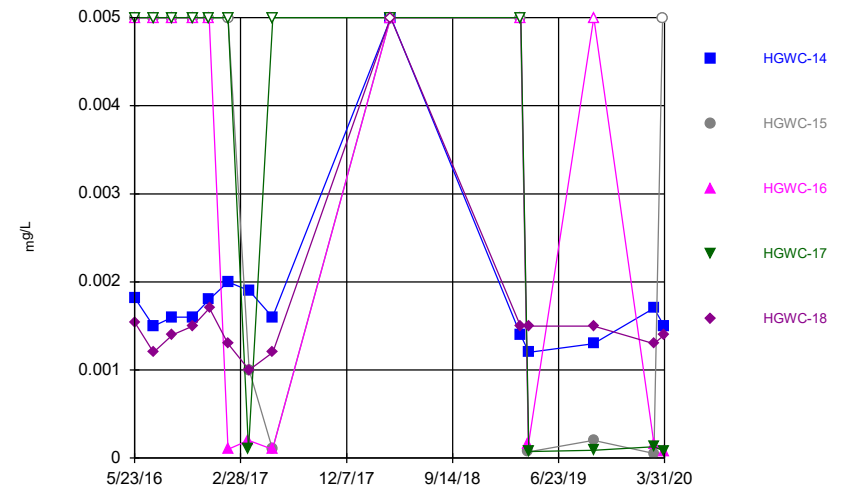
Constituent: Fluoride Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



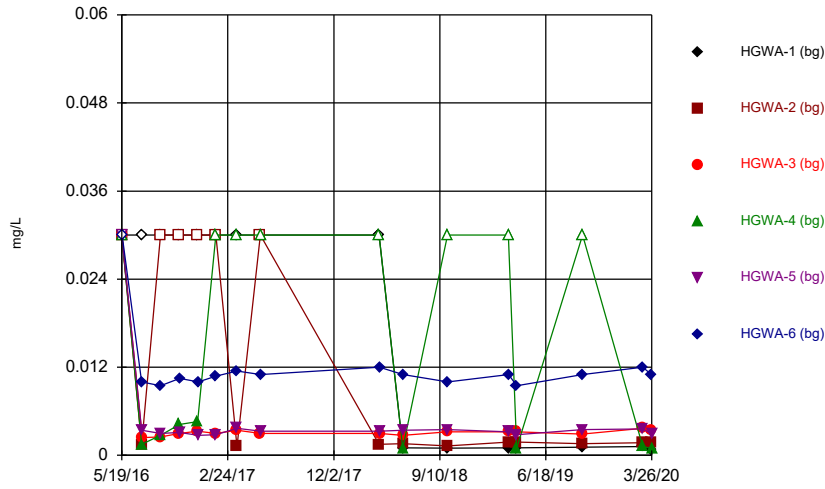
Constituent: Lead Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



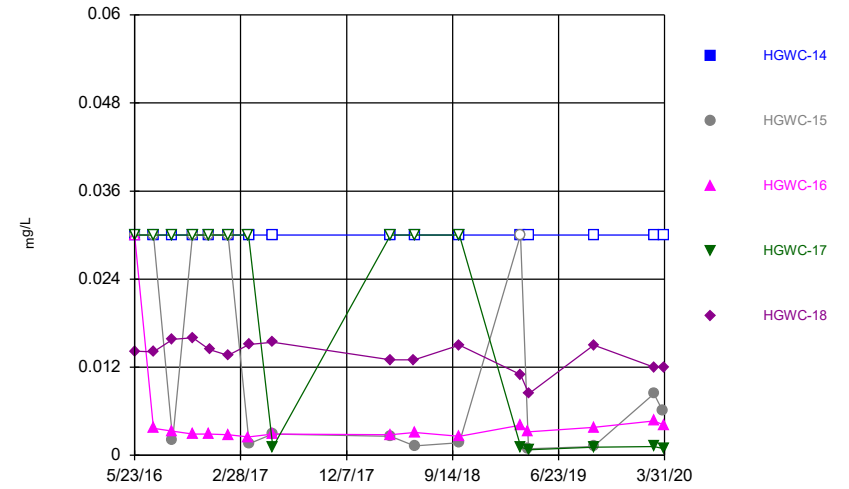
Constituent: Lead Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



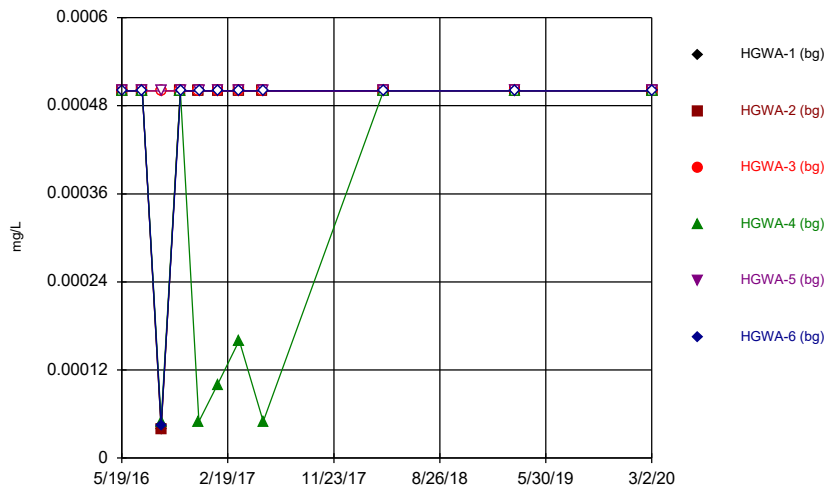
Constituent: Lithium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



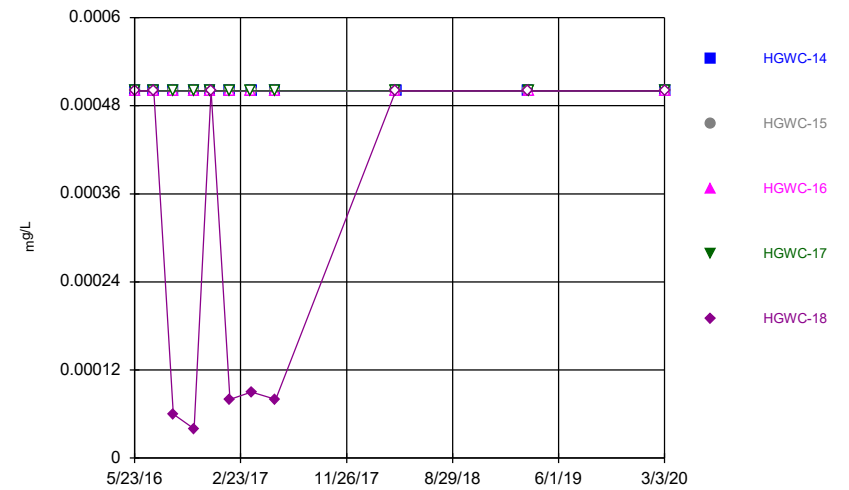
Constituent: Lithium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



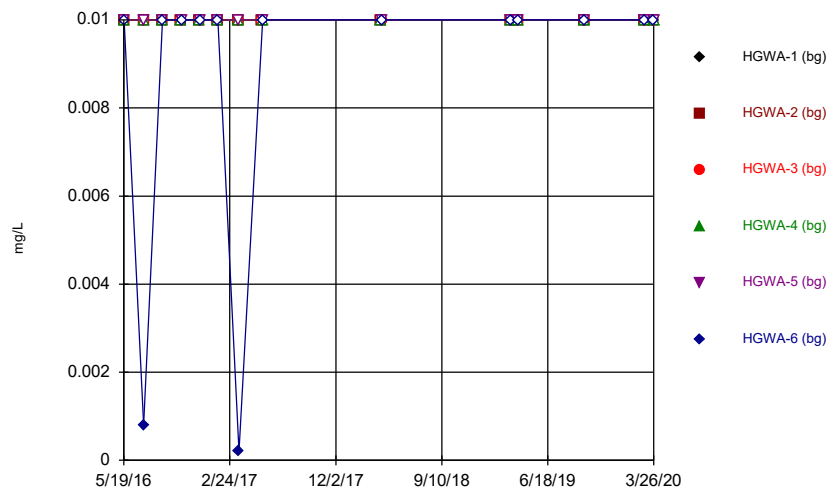
Constituent: Mercury Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



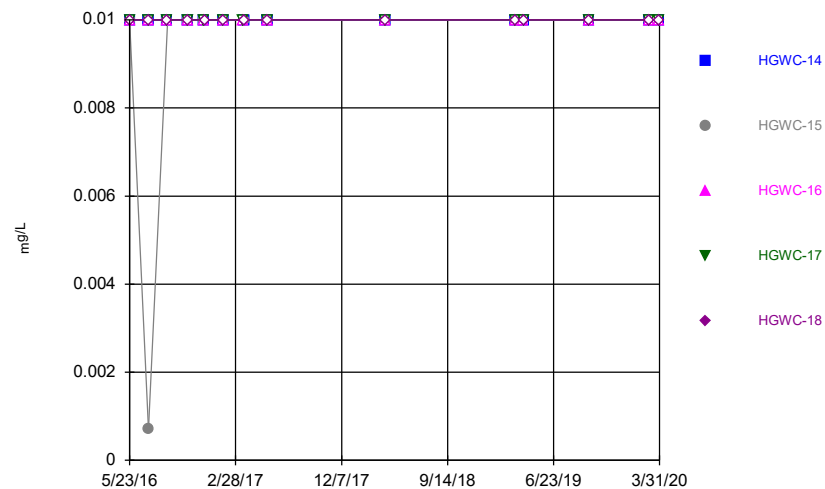
Constituent: Mercury Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



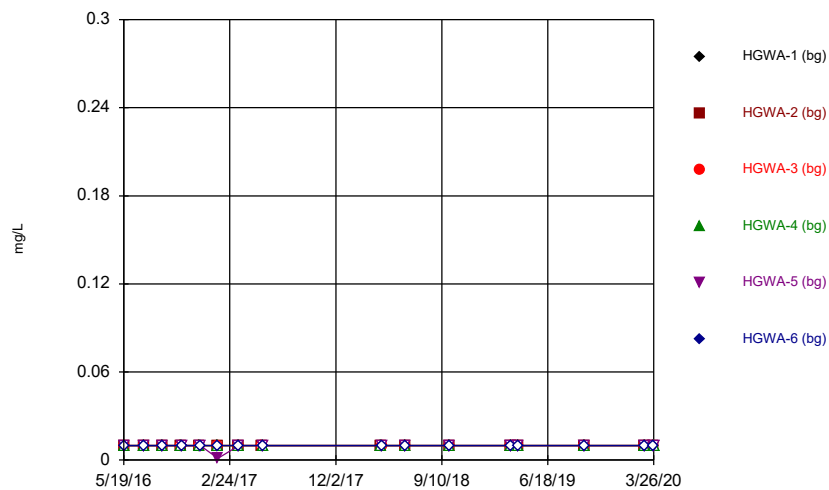
Constituent: Molybdenum Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



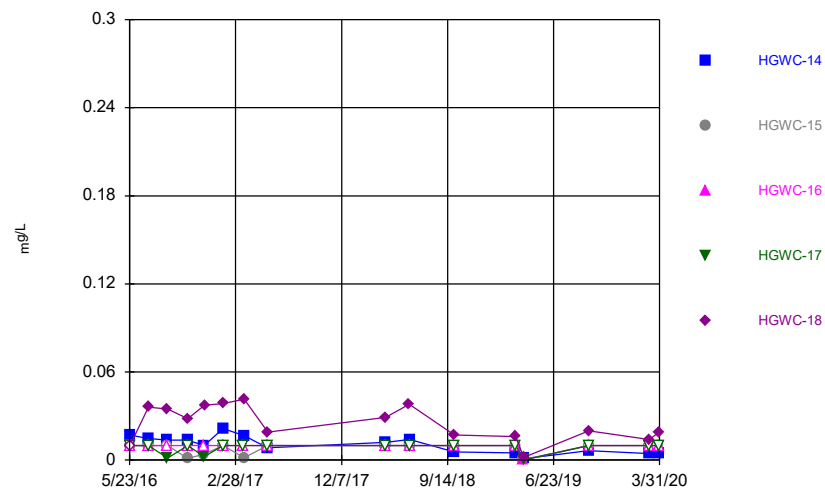
Constituent: Molybdenum Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



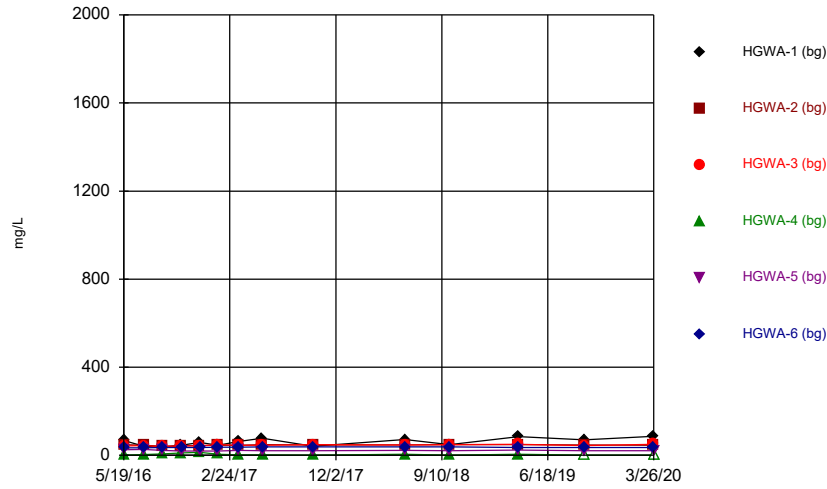
Constituent: Selenium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



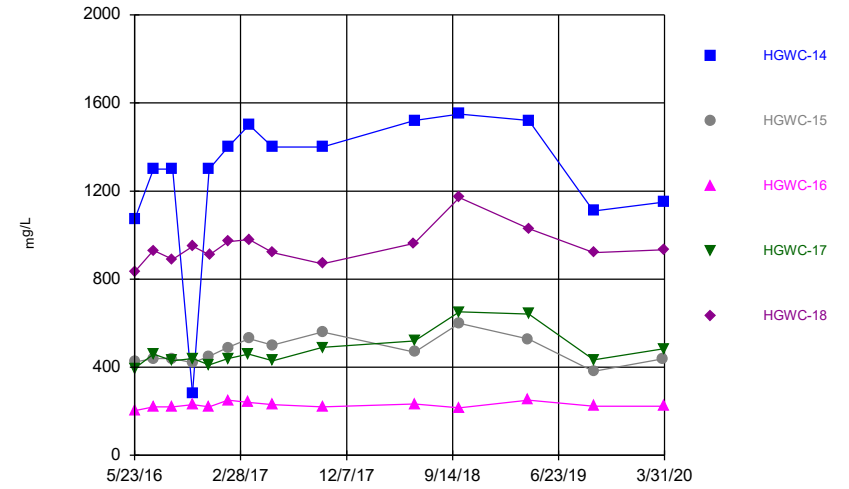
Constituent: Selenium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



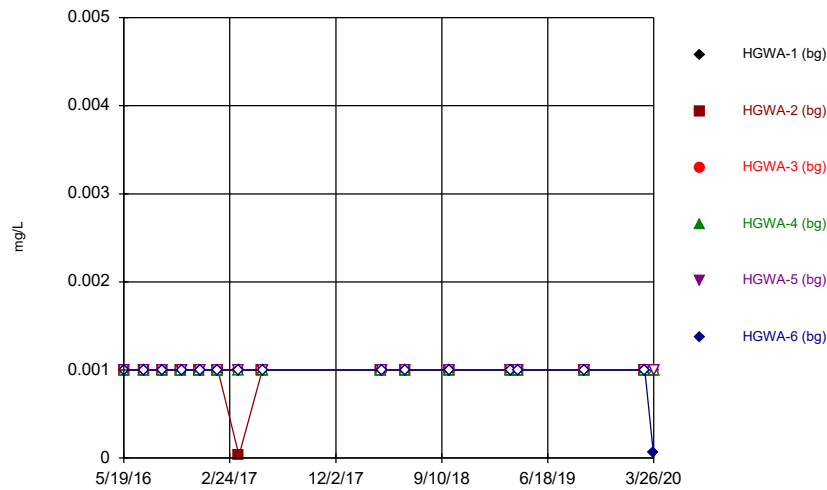
Constituent: Sulfate Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



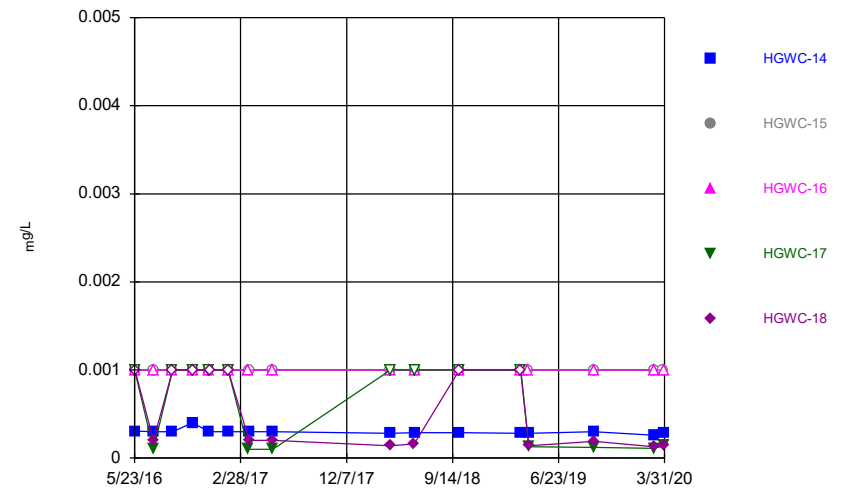
Constituent: Sulfate Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



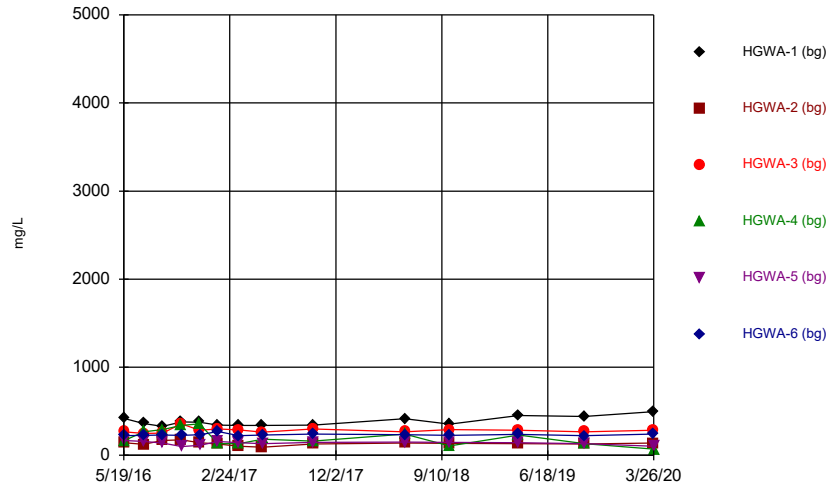
Constituent: Thallium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Thallium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

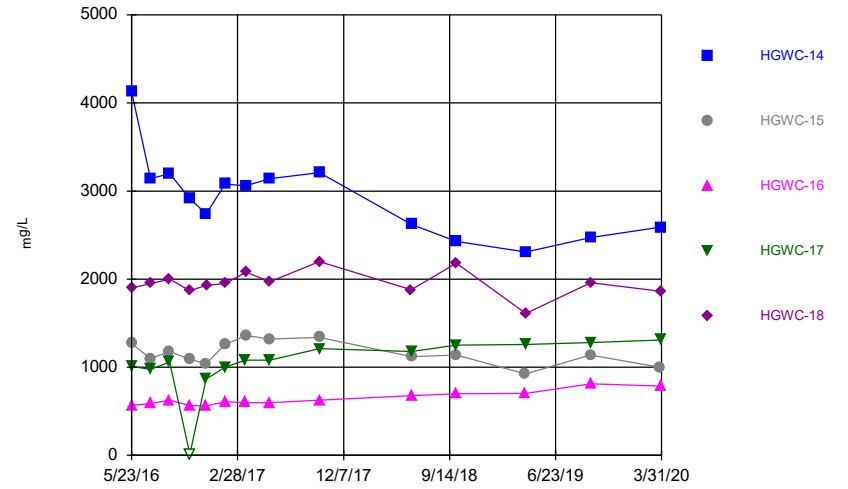
Time Series



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series

Constituent: Antimony (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.003	<0.003	<0.003	<0.003	<0.003				
5/20/2016						<0.003			
5/23/2016							<0.003	<0.003	<0.003
7/11/2016	<0.003	<0.003		<0.003	<0.003	0.001 (J)			
7/12/2016			0.0003 (J)				0.0003 (J)	<0.003	<0.003
8/30/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
9/1/2016							<0.003	<0.003	<0.003
10/19/2016	0.0014 (J)	<0.003	<0.003	<0.003					
10/20/2016					0.0023 (J)	<0.003			
10/24/2016							<0.003	<0.003	
10/25/2016									<0.003
12/6/2016	<0.003	<0.003	<0.003	<0.003					
12/7/2016							<0.003	<0.003	<0.003
12/8/2016					<0.003	<0.003			
1/24/2017	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
1/26/2017							<0.003	<0.003	<0.003
3/21/2017	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
3/22/2017									<0.003
3/23/2017							<0.003	<0.003	
5/22/2017	<0.003	<0.003	<0.003						
5/23/2017				<0.003	<0.003	<0.003			
5/24/2017							<0.003	<0.003	<0.003
4/2/2018	<0.003	<0.003		<0.003					
4/3/2018			<0.003		<0.003	<0.003		<0.003	<0.003
4/4/2018							<0.003		
3/11/2019				<0.003					
3/12/2019	<0.003	<0.003	<0.003		<0.003	<0.003			
3/14/2019							<0.003	<0.003	
3/15/2019									<0.003
9/23/2019	<0.003	<0.003	<0.003						
3/2/2020	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
3/3/2020							<0.003	<0.003	<0.003

Time Series

Constituent: Antimony (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.003	
5/24/2016		<0.003
7/12/2016	<0.003	<0.003
9/1/2016	<0.003	<0.003
10/25/2016	<0.003	<0.003
12/7/2016	<0.003	
12/8/2016		<0.003
1/26/2017	<0.003	<0.003
3/22/2017	<0.003	
3/23/2017		<0.003
5/25/2017	<0.003	<0.003
4/3/2018	<0.003	<0.003
3/14/2019		<0.003
3/15/2019	<0.003	
3/3/2020	<0.003	<0.003

Time Series

Constituent: Arsenic (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.005	0.00127 (J)	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
5/23/2016							0.00268 (J)	<0.005	<0.005
7/11/2016	<0.005	0.002 (J)		<0.005	<0.005	<0.005			
7/12/2016			0.0008 (J)				0.0059	<0.005	<0.005
8/30/2016	<0.005	0.0017 (J)	<0.005	<0.005	<0.005	<0.005			
9/1/2016							0.0056	<0.005	<0.005
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					<0.005	<0.005			
10/24/2016							0.0058	<0.005	
10/25/2016									<0.005
12/6/2016	<0.005	<0.005	<0.005	<0.005					
12/7/2016							<0.005	<0.005	<0.005
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
1/26/2017							0.0089	<0.005	<0.005
3/21/2017	0.0005 (J)	<0.005	0.0007 (J)	<0.005	<0.005	<0.005			
3/22/2017									0.0005 (J)
3/23/2017							0.0069	0.0008 (J)	
5/22/2017	<0.005	0.0006 (J)	0.0006 (J)						
5/23/2017				<0.005	<0.005	<0.005			
5/24/2017							0.0048 (J)	<0.005	<0.005
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005		<0.005	<0.005
4/4/2018							0.0052		
6/4/2018	<0.005	0.00088 (J)	0.0008 (J)	<0.005					
6/5/2018					<0.005	<0.005			
6/6/2018							0.0059	<0.005	<0.005
10/1/2018	<0.005	<0.005	0.0011 (J)	<0.005					
10/2/2018					0.00064 (J)	<0.005			
10/3/2018							0.0032 (J)	<0.005	<0.005
3/11/2019				<0.005					
3/12/2019	<0.005	0.00069 (J)	0.00063 (J)		<0.005	<0.005			
3/14/2019							0.0029 (J)	<0.005	
3/15/2019									<0.005
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019								0.00017 (J)	0.0001 (J)
4/5/2019							<0.005		
9/23/2019	0.00046 (J)	0.00067 (J)	0.0011 (J)						
9/24/2019				<0.005	0.00055 (J)	<0.005	0.0039 (J)	0.00037 (J)	
9/25/2019									<0.005
3/2/2020	<0.005	0.00043 (J)	0.0004 (J)	<0.005	<0.005	<0.005			
3/3/2020							0.0035 (J)	<0.005	<0.005
3/25/2020	<0.005	<0.005	<0.005			<0.005			
3/26/2020				<0.005	<0.005			<0.005	
3/30/2020							0.0051		0.0011 (J)

Time Series

Constituent: Arsenic (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.005	
5/24/2016		0.00294 (J)
7/12/2016	<0.005	0.0074
9/1/2016	<0.005	0.0073
10/25/2016	<0.005	0.006
12/7/2016	<0.005	
12/8/2016		0.007
1/26/2017	<0.005	0.0068
3/22/2017	0.0007 (J)	
3/23/2017		0.0082
5/25/2017	0.0007 (J)	0.006
4/3/2018	<0.005	0.0062
6/5/2018		0.008
6/6/2018	0.00097 (J)	
10/3/2018	<0.005	0.0039 (J)
3/14/2019		0.0036 (J)
3/15/2019	<0.005	
4/5/2019	<0.005	0.0015 (J)
9/25/2019	<0.005	0.0044 (J)
3/3/2020	<0.005	0.0057
3/31/2020	0.0008 (J)	0.0056

Time Series

Constituent: Barium (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.0346	0.114	0.111	0.0266	0.0519				
5/20/2016						0.174			
5/23/2016							<0.2	0.0315 (J)	0.0841
7/11/2016	0.0311	0.112		0.0309	0.0565	0.134			
7/12/2016			0.115				0.0214	0.0372	0.0886
8/30/2016	0.0293	0.131	0.113	0.031	0.0548	0.212			
9/1/2016							0.0208	0.0364	0.0934
10/19/2016	0.0293	0.111	0.123	0.0332					
10/20/2016					0.0539	0.157			
10/24/2016							0.0208	0.0326	
10/25/2016									0.0991
12/6/2016	0.0304	0.108	0.127	0.0334					
12/7/2016							0.022	0.0301	0.101
12/8/2016					0.0496	0.162			
1/24/2017	0.028	0.102	0.126	0.0192	0.0478	0.168			
1/26/2017							0.0238	0.0287	0.105
3/21/2017	0.0275	0.095	0.12	0.0175	0.0453	0.186			
3/22/2017									0.11
3/23/2017							0.0244	0.0329	
5/22/2017	0.0281	0.103	0.117						
5/23/2017				0.0227	0.0496	0.187			
5/24/2017							0.0228	0.0283	0.106
4/2/2018	0.026	0.099		0.022					
4/3/2018			0.11		0.038	0.14		0.019	0.099
4/4/2018							0.021		
6/4/2018	0.035	0.11	0.12	0.027					
6/5/2018					0.046	0.21			
6/6/2018							0.022	0.022	0.11
10/1/2018	0.029	0.11	0.14	0.018					
10/2/2018					0.047	0.19			
10/3/2018							0.02	0.025	0.11
3/11/2019				0.029					
3/12/2019	0.042	0.12	0.13		0.05	0.2			
3/14/2019							0.019	0.021	
3/15/2019									0.13
4/1/2019			0.13						
4/2/2019	0.04	0.13		0.03	0.044	0.19			
4/4/2019								0.018	0.11
4/5/2019							0.016		
9/23/2019	0.042	0.13	0.13						
9/24/2019				0.03	0.053	0.22	0.021	0.019	
9/25/2019									0.11
3/2/2020	0.034	0.11	0.14	0.023	0.053	0.19			
3/3/2020							0.018	0.018	0.12
3/25/2020	0.043	0.12	0.13			0.19			
3/26/2020				0.026	0.045			0.016	
3/30/2020							0.02		0.11

Time Series

Constituent: Barium (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	0.0222 (J)	
5/24/2016		<0.2
7/12/2016	0.0221	0.0346
9/1/2016	0.0227	0.0336
10/25/2016	0.0225	0.0349
12/7/2016	0.0227	
12/8/2016		0.0339
1/26/2017	0.0229	0.0293
3/22/2017	0.0248	
3/23/2017		0.0313
5/25/2017	0.0255	0.0336
4/3/2018	0.025	0.028
6/5/2018		0.03
6/6/2018	0.028	
10/3/2018	0.028	0.032
3/14/2019		0.029
3/15/2019	0.029	
4/5/2019	0.022	0.021
9/25/2019	0.025	0.03
3/3/2020	0.026	0.026
3/31/2020	0.029	0.029

Time Series

Constituent: Beryllium (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.003	<0.003	<0.003	<0.003	<0.003				
5/20/2016						<0.003			
5/23/2016							<0.003	<0.003	<0.003
7/11/2016	<0.003	0.0001 (J)		<0.003	<0.003	<0.003			
7/12/2016			<0.003				0.0005 (J)	<0.003	<0.003
8/30/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
9/1/2016							0.0005 (J)	<0.003	<0.003
10/19/2016	<0.003	0.0001 (J)	<0.003	<0.003					
10/20/2016					<0.003	<0.003			
10/24/2016							0.0005 (J)	<0.003	
10/25/2016									<0.003
12/6/2016	<0.003	0.0002 (J)	<0.003	<0.003					
12/7/2016							0.0006 (J)	<0.003	<0.003
12/8/2016					<0.003	<0.003			
1/24/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
1/26/2017							0.0005 (J)	<0.003	<0.003
3/21/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
3/22/2017									<0.003
3/23/2017							0.0006 (J)	<0.003	
5/22/2017	<0.003	0.0001 (J)	<0.003						
5/23/2017				<0.003	<0.003	<0.003			
5/24/2017							0.0005 (J)	<0.003	<0.003
4/2/2018	<0.003	<0.003		<0.003					
4/3/2018			<0.003		<0.003	<0.003		<0.003	<0.003
4/4/2018							<0.003		
3/11/2019				5E-05 (J)					
3/12/2019	<0.003	0.00017 (J)	<0.003		<0.003	<0.003			
3/14/2019							0.00043 (J)	<0.003	
3/15/2019									<0.003
4/1/2019			<0.003						
4/2/2019	<0.003	0.00015 (J)		<0.003	<0.003	<0.003			
4/4/2019								<0.003	<0.003
4/5/2019							0.00027 (J)		
9/23/2019	<0.003	0.00011 (J)	<0.003						
9/24/2019				<0.003	<0.003	<0.003	0.00044 (J)	<0.003	
9/25/2019									<0.003
3/2/2020	<0.003	0.00014 (J)	<0.003	0.00019 (J)	<0.003	<0.003			
3/3/2020							0.00043 (J)	<0.003	<0.003
3/25/2020	<0.003	0.00016 (J)	<0.003			<0.003			
3/26/2020				7.6E-05 (J)	<0.003			<0.003	
3/30/2020							0.00043 (J)		<0.003

Time Series

Constituent: Beryllium (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.003	
5/24/2016		0.00278 (J)
7/12/2016	<0.003	0.0032
9/1/2016	<0.003	0.0034
10/25/2016	<0.003	0.0034
12/7/2016	<0.003	
12/8/2016		0.0033
1/26/2017	<0.003	0.0034
3/22/2017	<0.003	
3/23/2017		0.0036
5/25/2017	<0.003	0.0036
4/3/2018	<0.003	<0.003
3/14/2019		0.0026 (J)
3/15/2019	<0.003	
4/5/2019	<0.003	0.0022 (J)
9/25/2019	<0.003	0.0031
3/3/2020	<0.003	0.0029 (J)
3/31/2020	<0.003	0.003

Time Series

Constituent: Boron (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.0214 (J)	0.0321 (J)	<0.04	<0.04	<0.04				
5/20/2016						0.0363 (J)			
5/23/2016							15.4	2.02	1.36
7/11/2016	0.0142 (J)	0.0337 (J)		0.0175 (J)	0.0052 (J)	0.0179 (J)			
7/12/2016			0.0074 (J)				16	1.65	1.62
8/30/2016	0.0074 (J)	0.0173 (J)	<0.04	0.0072 (J)	0.0068 (J)	0.014 (J)			
9/1/2016							12.3	1.93	1.31
10/19/2016	0.0224 (J)	0.0341 (J)	0.0085 (J)	0.018 (J)					
10/20/2016					0.0135 (J)	0.0197 (J)			
10/24/2016							13.7	1.93	
10/25/2016									1.27
12/6/2016	0.0211 (J)	0.0326 (J)	0.0085 (J)	0.0158 (J)					
12/7/2016							16.5	2.23	1.42
12/8/2016					0.0083 (J)	0.0159 (J)			
1/24/2017	0.0165 (J)	0.0365 (J)	0.01 (J)	0.0145 (J)	0.0072 (J)	<0.04			
1/26/2017							19.2	2.31	1.19
3/21/2017	0.0187 (J)	0.0349 (J)	0.0079 (J)	0.0101 (J)	<0.04	0.0166 (J)			
3/22/2017									1.32
3/23/2017							23.1	2.72	
5/22/2017	0.0782	0.0475	0.0131 (J)						
5/23/2017				0.0159 (J)	0.0095 (J)	0.0167 (J)			
5/24/2017							25.8	2.26	1.67
10/3/2017	0.0198 (J)	0.0386 (J)	0.0097 (J)	0.0162 (J)	0.0071 (J)	0.017 (J)			
10/4/2017							20.5	2	1.43
6/4/2018	0.02 (J)	0.036 (J)	0.017 (J)	0.014 (J)					
6/5/2018					0.0066 (J)	0.016 (J)			
6/6/2018							16.7	2.4	1.9
10/1/2018	0.013 (J)	0.035 (J)	0.0061 (J)	0.0093 (J)					
10/2/2018					0.0081 (J)	0.014 (J)			
10/3/2018							16.4	2.4	1.7
4/1/2019			0.0066 (J)						
4/2/2019	0.016 (J)	0.034 (J)		0.01 (J)	0.0052 (J)	0.013 (J)			
4/4/2019								2.3	2.1
4/5/2019							12.5		
9/23/2019	0.021 (J)	0.04 (J)	0.0081 (J)						
9/24/2019				0.013 (J)	0.0088 (J)	0.016 (J)	14.7	2.9	
9/25/2019									2.7
3/25/2020	0.025 (J)	0.039 (J)	0.0096 (J)			0.021 (J)			
3/26/2020				0.012 (J)	0.0072 (J)			2.1	
3/30/2020							11.7		2.4

Time Series

Constituent: Boron (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	5.7	
5/24/2016		9.33
7/12/2016	9.58	11.9
9/1/2016	5.76	8.8
10/25/2016	5.38	8.5
12/7/2016	5.74	
12/8/2016		7.15
1/26/2017	5.78	9.17
3/22/2017	5.52	
3/23/2017		10.6
5/25/2017	8.58	13.2
10/4/2017	6.8	10
6/5/2018		8.4
6/6/2018	6.3	
10/3/2018	6.9	9.3
4/5/2019	5.9	6.4
9/25/2019	8.1	11.7
3/31/2020	6.9	9.4

Time Series

Constituent: Cadmium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025				
5/20/2016						<0.0025			
5/23/2016							0.000139 (J)	0.00271 (J)	<0.0025
7/11/2016	<0.0025	<0.0025		<0.0025	<0.0025	<0.0025			
7/12/2016			<0.0025				<0.0025	0.0019	<0.0025
8/30/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			
9/1/2016							0.0001 (J)	0.0017	<0.0025
10/19/2016	<0.0025	<0.0025	<0.0025	<0.0025					
10/20/2016					<0.0025	<0.0025			
10/24/2016							0.0002 (J)	0.0018	
10/25/2016									<0.0025
12/6/2016	<0.0025	<0.0025	<0.0025	<0.0025					
12/7/2016							0.0001 (J)	0.0018	<0.0025
12/8/2016					<0.0025	<0.0025			
1/24/2017	<0.0025	0.0001 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
1/26/2017							0.0001 (J)	0.0013	<0.0025
3/21/2017	<0.0025	7E-05 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
3/22/2017									<0.0025
3/23/2017							0.0002 (J)	0.002	
5/22/2017	<0.0025	0.0001 (J)	<0.0025						
5/23/2017				<0.0025	<0.0025	<0.0025			
5/24/2017							0.0001 (J)	0.0041	<0.0025
4/2/2018	<0.0025	<0.0025		<0.0025					
4/3/2018			<0.0025		<0.0025	<0.0025		0.0022	<0.0025
4/4/2018							<0.0025		
6/4/2018	<0.0025	0.00014 (J)	<0.0025	<0.0025					
6/5/2018					<0.0025	<0.0025			
6/6/2018							0.00012 (J)	0.0021	<0.0025
10/1/2018	<0.0025	<0.0025	<0.0025	<0.0025					
10/2/2018					<0.0025	<0.0025			
10/3/2018							0.0001 (J)	0.0026	<0.0025
3/11/2019				<0.0025					
3/12/2019	<0.0025	0.00013 (J)	<0.0025		<0.0025	<0.0025			
3/14/2019							<0.0025	0.0024	
3/15/2019									<0.0025
4/1/2019			<0.0025						
4/2/2019	<0.0025	0.00015 (J)		<0.0025	<0.0025	<0.0025			
4/4/2019								0.0018	<0.0025
4/5/2019							7.9E-05 (J)		
9/23/2019	<0.0025	<0.0025	<0.0025						
9/24/2019				<0.0025	<0.0025	<0.0025	<0.0025	0.0014 (J)	
9/25/2019									<0.0025
3/2/2020	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			
3/3/2020							<0.0025	0.0015 (J)	<0.0025
3/25/2020	<0.0025	0.00014 (J)	<0.0025			<0.0025			
3/26/2020				<0.0025	<0.0025			0.0016 (J)	
3/30/2020							<0.0025		<0.0025

Time Series

Constituent: Cadmium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.0025	
5/24/2016		<0.0025
7/12/2016	<0.0025	0.0022
9/1/2016	<0.0025	0.0024
10/25/2016	<0.0025	0.0022
12/7/2016	<0.0025	
12/8/2016		0.0024
1/26/2017	<0.0025	0.0025
3/22/2017	7E-05 (J)	
3/23/2017		0.0025
5/25/2017	<0.0025	0.0027
4/3/2018	<0.0025	0.0022
6/5/2018		0.0022
6/6/2018	<0.0025	
10/3/2018	<0.0025	0.0027
3/14/2019		0.0019
3/15/2019	<0.0025	
4/5/2019	<0.0025	0.0017
9/25/2019	<0.0025	0.0023 (J)
3/3/2020	<0.0025	0.0021 (J)
3/31/2020	<0.0025	0.0017 (J)

Time Series

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	138	22.9	76.2	48.4	35.5				
5/20/2016						56.1			
5/23/2016							664	184	146
7/11/2016	97.2	22.3		73	35.4	49.3			
7/12/2016			61.5				528	186	142
8/30/2016	97.5	26.4	65.1	85.7	28	53.9			
9/1/2016							586	189	141
10/19/2016	99.2	21.7	73.2	89.7					
10/20/2016					26.7	50.7			
10/24/2016							564	200	
10/25/2016									138
12/6/2016	105	18.2	74.9	80					
12/7/2016							590	203	146
12/8/2016					23.5	49.2			
1/24/2017	95.7	18.5	69.6	30.8	24.5	48.3			
1/26/2017							558	212	139
3/21/2017	106	18.6	75.7	34	30.8	51.3			
3/22/2017									150
3/23/2017							652	229	
5/22/2017	107	17.8	71.5						
5/23/2017				43	24.2	49.1			
5/24/2017							617	265	153
10/3/2017	102	20.2	76.3	46.9	29	55.1			
10/4/2017							644	230	156
6/4/2018	124	19.1	73.4	81.9					
6/5/2018					27.8	54.5			
6/6/2018							606	250	177
10/1/2018	108	20.5 (J)	80.9	22 (J)					
10/2/2018					28.9	54.7			
10/3/2018							558	234	160
4/1/2019			80.5						
4/2/2019	132	22.5 (J)		76	26.3	49.7			
4/4/2019								214	196
4/5/2019							606		
9/23/2019	118	19.5	71						
9/24/2019				36.6	29.3	52.5	507	202	
9/25/2019									185
3/25/2020	127	23	89.8			58.1			
3/26/2020				14.9	27.8			240	
3/30/2020							600		208

Time Series

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	225	
5/24/2016		403
7/12/2016	199	328
9/1/2016	213	379
10/25/2016	206	362
12/7/2016	212	
12/8/2016		366
1/26/2017	198	394
3/22/2017	239	
3/23/2017		440
5/25/2017	292	492
10/4/2017	305	470
6/5/2018		425
6/6/2018	299	
10/3/2018	286	421
4/5/2019	340	400
9/25/2019	305	437
3/31/2020	328	418

Time Series

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	9.94	6.14	5.93	4.56	1.57				
5/20/2016						1.35			
5/23/2016							659	209	25.8
7/11/2016	6.3	5.9		5	2	1.7			
7/12/2016			6.2				620	190	34
8/30/2016	6	6.2	6.4	4.9	2	1.6			
9/1/2016							510	200	34
10/19/2016	5.8	6.1	6.5	4.6					
10/20/2016					2.2	1.6			
10/24/2016							110	200	
10/25/2016									35
12/6/2016	5.4	6	7.2	4.5					
12/7/2016							510	240	38
12/8/2016					2	1.6			
1/24/2017	5.2	6.1	6.4	4.7	1.6	1.9			
1/26/2017							640	260	41
3/21/2017	4.6	5.9	7.5	4.3	2	1.3			
3/22/2017									41
3/23/2017							600	280	
5/22/2017	4.6	5.9	6.5						
5/23/2017				4.5	1.7	1.2			
5/24/2017							510	240	44
10/3/2017	5.6	6.3	6.5	4.8	1.7	2.1			
10/4/2017							420	210	50
6/4/2018	13.1	6.1	6.3	4.5					
6/5/2018					1.6	1.2			
6/6/2018							357	196	50.6
10/1/2018	6.6	6.4	6.4	3.8					
10/2/2018					2.4	1.7			
10/3/2018							368	200	49.9
4/1/2019			6.5						
4/2/2019	20.3	5.8		4.4	1.7	1.6			
4/4/2019								138	76.8
4/5/2019							227		
9/23/2019	17.7	5.1	5.9						
9/24/2019				3.6	1.7	1.3	188	120	
9/25/2019									84.4
3/25/2020	20.4	5.2	6.1			1.2			
3/26/2020				3.4	1.4			142	
3/30/2020							236		80.2

Time Series

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	94	
5/24/2016		280
7/12/2016	100	300
9/1/2016	95	270
10/25/2016	98	290
12/7/2016	89	
12/8/2016		300
1/26/2017	99	340
3/22/2017	100	
3/23/2017		350
5/25/2017	99	290
10/4/2017	130	260
6/5/2018		261
6/6/2018	166	
10/3/2018	193	302
4/5/2019	195	217
9/25/2019	139	181
3/31/2020	161	126

Time Series

Constituent: Chromium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
5/23/2016							<0.01	<0.01	<0.01
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01				<0.01	<0.01	<0.01
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/1/2016							<0.01	<0.01	<0.01
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
10/24/2016							<0.01	<0.01	
10/25/2016									<0.01
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/7/2016							<0.01	<0.01	<0.01
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
1/26/2017							<0.01	<0.01	<0.01
3/21/2017	0.0005 (J)	<0.01	<0.01	0.0004 (J)	<0.01	0.0007 (J)			
3/22/2017									0.0021 (J)
3/23/2017							<0.01	0.0005 (J)	
5/22/2017	<0.01	<0.01	0.0007 (J)						
5/23/2017				<0.01	<0.01	<0.01			
5/24/2017							<0.01	<0.01	<0.01
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01		<0.01	<0.01
4/4/2018							<0.01		
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019							<0.01	<0.01	
3/15/2019									<0.01
4/1/2019			<0.01						
4/2/2019	<0.01	0.0079 (J)		0.019	<0.01	<0.01			
4/4/2019								<0.01	<0.01
4/5/2019							<0.01		
9/23/2019	<0.01	0.00058 (J)	<0.01						
9/24/2019				<0.01	<0.01	<0.01	<0.01	0.00041 (J)	
9/25/2019									<0.01
3/2/2020	<0.01	0.00041 (J)	<0.01	0.0004 (J)	0.0005 (J)	<0.01			
3/3/2020							0.00042 (J)	<0.01	0.00071 (J)
3/25/2020	0.00072 (J)	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01			<0.01	
3/30/2020							0.00066 (J)		0.0004 (J)

Time Series

Constituent: Chromium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.01	
5/24/2016		<0.01
7/12/2016	<0.01	<0.01
9/1/2016	<0.01	<0.01
10/25/2016	<0.01	<0.01
12/7/2016	<0.01	
12/8/2016		<0.01
1/26/2017	<0.01	<0.01
3/22/2017	<0.01	
3/23/2017		0.0005 (J)
5/25/2017	<0.01	<0.01
4/3/2018	<0.01	<0.01
3/14/2019		<0.01
3/15/2019	<0.01	
4/5/2019	<0.01	<0.01
9/25/2019	<0.01	<0.01
3/3/2020	0.0018 (J)	0.0004 (J)
3/31/2020	<0.01	<0.01

Time Series

Constituent: Cobalt (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.005	0.0293	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
5/23/2016							<0.005	0.0419 (J)	<0.005
7/11/2016	0.0004 (J)	0.0267		<0.005	0.001 (J)	<0.005			
7/12/2016			<0.005				0.0232	0.0393	<0.005
8/30/2016	<0.005	0.028	<0.005	<0.005	0.001 (J)	<0.005			
9/1/2016							0.0248	0.045	<0.005
10/19/2016	<0.005	0.0201	<0.005	<0.005					
10/20/2016					0.0008 (J)	<0.005			
10/24/2016							0.0253	0.0557	
10/25/2016									<0.005
12/6/2016	<0.005	0.0184	<0.005	<0.005					
12/7/2016							0.0269	0.0536	<0.005
12/8/2016					0.0006 (J)	<0.005			
1/24/2017	<0.005	0.0206	<0.005	<0.005	0.0006 (J)	<0.005			
1/26/2017							0.0294	0.055	<0.005
3/21/2017	<0.005	0.0251	<0.005	<0.005	0.0008 (J)	<0.005			
3/22/2017									<0.005
3/23/2017							0.0311	0.0715	
5/22/2017	<0.005	0.0263	<0.005						
5/23/2017				<0.005	0.0006 (J)	<0.005			
5/24/2017							0.0279	0.0446	<0.005
4/2/2018	<0.005	0.019		<0.005					
4/3/2018			<0.005		<0.005	<0.005		0.032	<0.005
4/4/2018							0.025		
6/4/2018	<0.005	0.025	<0.005	<0.005					
6/5/2018					<0.005	<0.005			
6/6/2018							0.027	0.032	<0.005
10/1/2018	<0.005	0.026	<0.005	<0.005					
10/2/2018					<0.005	<0.005			
10/3/2018							0.023	0.051	<0.005
3/11/2019				<0.005					
3/12/2019	<0.005	0.017	<0.005		0.00099 (J)	<0.005			
3/14/2019							0.025	0.038	
3/15/2019									<0.005
4/1/2019			<0.005						
4/2/2019	<0.005	0.019		<0.005	0.0012 (J)	<0.005			
4/4/2019								0.035	0.00028 (J)
4/5/2019							0.021		
9/23/2019	<0.005	0.038	<0.005						
9/24/2019				<0.005	0.00063 (J)	<0.005	0.026	0.022	
9/25/2019									<0.005
3/2/2020	<0.005	0.019	<0.005	0.00063 (J)	0.00093 (J)	<0.005			
3/3/2020							0.029	0.03	0.00037 (J)
3/25/2020	<0.005	0.02	<0.005			<0.005			
3/26/2020				0.00058 (J)	0.0013 (J)			0.022	
3/30/2020							0.028		<0.005

Time Series

Constituent: Cobalt (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	0.0167	
5/24/2016		0.17 (J)
7/12/2016	0.0148	0.168
9/1/2016	0.0151	0.18
10/25/2016	0.0141	0.188
12/7/2016	0.0141	
12/8/2016		0.206
1/26/2017	0.0154	0.195
3/22/2017	0.0169	
3/23/2017		0.223
5/25/2017	0.0154	0.209
4/3/2018	0.016	0.19
6/5/2018		0.19
6/6/2018	0.018	
10/3/2018	0.016	0.19
3/14/2019		0.16
3/15/2019	0.017	
4/5/2019	0.016	0.14
9/25/2019	0.015	0.18
3/3/2020	0.016	0.15
3/31/2020	0.016	0.16

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.397 (U)	0.627 (U)	0.342 (U)	0.662 (U)	0.685 (U)				
5/20/2016						0.843 (U)			
5/23/2016							0.568 (U)	0.171 (U)	
7/1/2016									0 (U)
7/11/2016	0.738 (U)	1.38		1.19	1.68	0.494 (U)			
7/12/2016			0.499 (U)				1.31	0.611 (U)	0.182 (U)
8/30/2016	0.581 (U)	1.05 (U)	0.976 (U)	0.847 (U)	2.42	0.946 (U)			
9/1/2016							1.64	0.766 (U)	1.23
10/19/2016	0.213 (U)	1.11 (U)	0.626 (U)	2.34					
10/20/2016					0.351 (U)	0.664 (U)			
10/24/2016							1.88	0.969	
10/25/2016									1.05 (U)
12/6/2016	0.444 (U)	0.741 (U)	0.805 (U)	0.925 (U)					
12/7/2016							1.35	0.302 (U)	1.11 (U)
12/8/2016					0.905 (U)	0.421 (U)			
1/24/2017	0.373 (U)	0.908 (U)	0.336 (U)	0.607 (U)	0.0774 (U)	0.965 (U)			
1/26/2017							2.1	0.626 (U)	1.29 (U)
3/21/2017	0.816 (U)	0.567 (U)	0.358 (U)	0.074 (U)	0.0599 (U)	0.139 (U)			
3/22/2017									0.453 (U)
3/23/2017							1.17	0.662 (U)	
5/22/2017	0.554 (U)	0.638 (U)	0.744 (U)						
5/23/2017				0.55 (U)	0.477 (U)	0.308 (U)			
5/24/2017							1 (U)	0.202 (U)	1.05 (U)
4/2/2018	0.405 (U)	0.761 (U)		0.371 (U)					
4/3/2018			0.684 (U)		0.858 (U)	0.828 (U)		0.384 (U)	0.783 (U)
4/4/2018							1.72		
6/4/2018	1.13 (U)	0.975 (U)	0.0291 (U)	0.622 (U)					
6/5/2018					0.767 (U)	0.424 (U)			
6/6/2018							1.31 (U)	1.32 (U)	0.595 (U)
10/1/2018	0.132 (U)	0.434 (U)	0.781 (U)	0.132 (U)					
10/2/2018					0.489 (U)	0.643 (U)			
10/3/2018							1.48	0.858 (U)	1.03 (U)
3/11/2019				0.781 (U)					
3/12/2019	0.327 (U)	0.454 (U)	1.01 (U)		0.833 (U)	0.982 (U)			
3/14/2019							1.5	0.462 (U)	
3/15/2019									0.591 (U)
4/1/2019			0.76 (U)						
4/2/2019	0.739 (U)	0.651 (U)		0.494 (U)	1.07 (U)	0.621 (U)			
4/4/2019								0.512 (U)	0.96 (U)
4/5/2019							1.43 (U)		
9/24/2019				0.455 (U)	0.201 (U)	0.874 (U)	1.17	0.582 (U)	
9/25/2019									0.643 (U)
9/30/2019	0.306 (U)	1.04 (U)	0.384 (U)						
3/2/2020	0.61 (U)	1.58	0.249 (U)	0.937 (U)	0.547 (U)	0.676 (U)			
3/3/2020							1.84	1.43	1.32 (U)
3/25/2020	4.36	0.621 (U)	0.833 (U)			0.509 (U)			
3/26/2020				0.578 (U)	0.907 (U)			0.855 (U)	
3/30/2020							1.08 (U)		0.288 (U)

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	0.618 (U)	
5/24/2016		1.82
7/12/2016	0.867	1.76
9/1/2016	0.857 (U)	1.51
10/25/2016	1.11 (U)	2.69
12/7/2016	0.964 (U)	
12/8/2016		2.21
1/26/2017	0.612 (U)	2.26
3/22/2017	0.437 (U)	
3/23/2017		1.81
5/25/2017	1.21 (U)	1.63
4/3/2018	0.409 (U)	2.53
6/5/2018		1.91
6/6/2018	0.772 (U)	
10/3/2018	1.08 (U)	2.22
3/14/2019		1.37 (U)
3/15/2019	0.917 (U)	
4/5/2019	1.07 (U)	2.22
9/25/2019	1.54	2.77
3/3/2020	1.33	2.35
3/31/2020	0.591 (U)	2.7

Time Series

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	7.27	5.81	7.45	6.51	6.62				
5/20/2016							7.58		
5/23/2016							4.56	6.17	7.15
7/11/2016	7.06	5.68		6.65	6.54	7.32			
7/12/2016			7.32				4.49	6.17	7.1
8/30/2016	7.28	5.63	7.43	7.14	6.38	7.69			
9/1/2016							4.54	6.22	7.29
10/19/2016	7.02	5.46	7.03	7.08					
10/20/2016					6.52	7.43			
10/24/2016							4.63	5.97	
10/25/2016									7.03
12/6/2016	7.09	5.38	7.08	7					
12/7/2016							4.6	5.87	6.85
12/8/2016					6.5	7.56			
1/24/2017	7.2	5.37	7.39	6.16	6.59	7.52			
1/26/2017							4.8	6.05	7.07
3/21/2017	7.01	4.9	6.83	6.07	6.55	7.4			
3/22/2017									7.15
3/23/2017							4.57	5.79	
5/22/2017	7.11	5.2	7.02						
5/23/2017				6.28	6.5	7.53			
5/24/2017							4.61	6.01	7.11
10/3/2017	7.21	5.3	7.47	6.45	6.63	7.51			
10/4/2017							4.74	5.82	7.17
4/2/2018	7.1	5.4		6.23					
4/3/2018			7.38		6.59	7.53		5.98	7.07
4/4/2018							4.5		
6/4/2018	7.06	5.27	7.38	6.82					
6/5/2018					6.44	7.37			
6/6/2018							4.49	6.12	7
10/1/2018	7.09	5.31	7.13	5.73					
10/2/2018					6.35	7.36			
10/3/2018							4.67	5.92	6.94
3/11/2019				6.27					
3/12/2019	7.03	5.42	7.29		6.42	7.5			
3/14/2019							4.66	5.71	
3/15/2019									7.09
4/1/2019			7.16						
4/2/2019	6.86	5.41		6.66	6.38	7.46			
4/4/2019								5.66	6.95
4/5/2019							4.67		
9/23/2019	7.02	5.33	7.3						
9/24/2019				6.16	6.4	7.41	4.77	6.33	
9/25/2019									6.92
3/2/2020	7.1	5.43	7.12	5.63	6.8	7.67			
3/3/2020							4.77	6	7.1
3/25/2020	6.95	5.36	7.4			7.39			
3/26/2020				5.77	6.38			6.03	
3/30/2020							4.57		7.09

Time Series

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	6.4	
5/24/2016		4.83
7/12/2016	6.09	4.58
9/1/2016	6.35	4.51
10/25/2016	6.23	4.53
12/7/2016	6.23	
12/8/2016		4.56
1/26/2017	6.24	4.61
3/22/2017	6.25	
3/23/2017		4.63
5/25/2017	6.27	4.69
10/4/2017	6.18	4.58
4/3/2018	6.22	4.54
6/5/2018		4.57
6/6/2018	6.22	
10/3/2018	6.23	4.41
3/14/2019		4.39
3/15/2019	6.32	
4/5/2019	6.26	4.5
9/25/2019	6.28	4.54
3/3/2020	6.35	4.55
3/31/2020	6.28	4.43

Time Series

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.105 (J)	0.0303 (J)	0.0513 (J)	0.036 (J)	0.08 (J)				
5/20/2016						0.065 (J)			
5/23/2016							<0.3	<0.3	0.038 (J)
7/11/2016	0.16 (J)	0.05 (J)		0.09 (J)	0.09 (J)	0.13 (J)			
7/12/2016			0.12 (J)				0.2 (J)	0.09 (J)	0.26 (J)
8/30/2016	0.09 (J)	0.06 (J)	0.09 (J)	0.06 (J)	0.08 (J)	0.07 (J)			
9/1/2016							0.08 (J)	0.22 (J)	0.42
10/19/2016	0.1 (J)	0.04 (J)	0.1 (J)	0.07 (J)					
10/20/2016					0.1 (J)	0.06 (J)			
10/24/2016							0.04 (J)	0.07 (J)	
10/25/2016									0.25 (J)
12/6/2016	0.11 (J)	0.36	0.21 (J)	0.07 (J)					
12/7/2016							0.11 (J)	0.23 (J)	0.23 (J)
12/8/2016					0.08 (J)	0.06 (J)			
1/24/2017	0.09 (J)	<0.3	0.06 (J)	<0.3	0.09 (J)	0.02 (J)			
1/26/2017							0.13 (J)	<0.3	0.02 (J)
3/21/2017	0.13 (J)	<0.3	0.005 (J)	<0.3	0.04 (J)	0.08 (J)			
3/22/2017									0.3
3/23/2017							0.28 (J)	0.12 (J)	
5/22/2017	0.12 (J)	<0.3	0.05 (J)						
5/23/2017				0.01 (J)	0.04 (J)	0.006 (J)			
5/24/2017							0.32	0.31	0.46
10/3/2017	0.13 (J)	<0.3	0.13 (J)	<0.3	0.06 (J)	<0.3			
10/4/2017							0.52	0.6	<0.3
4/2/2018	<0.3	<0.3		<0.3					
4/3/2018			<0.3		<0.3	<0.3		<0.3	<0.3
4/4/2018							<0.3		
6/4/2018	0.074 (J)	<0.3	<0.3	0.097 (J)					
6/5/2018					0.083 (J)	0.055 (J)			
6/6/2018							0.25 (J)	0.17 (J)	<0.3
10/1/2018	<0.3	<0.3	<0.3	<0.3					
10/2/2018					<0.3	0.076 (J)			
10/3/2018							0.21 (J)	<0.3	<0.3
3/11/2019				0.035 (J)					
3/12/2019	0.29 (J)	0.038 (J)	0.072 (J)		0.079 (J)	0.061 (J)			
3/14/2019							0.24 (J)	<0.3	
3/15/2019									<0.3
4/1/2019			0.029 (J)						
4/2/2019	0.1 (J)	0.071 (J)		<0.3	0.12 (J)	<0.3			
4/4/2019								0.066 (J)	<0.3
4/5/2019							0.66		
9/23/2019	0.078 (J)	<0.3	<0.3						
9/24/2019				<0.3	0.058 (J)	<0.3	0.053 (J)	0.12 (J)	
9/25/2019									<0.3
3/2/2020	0.076 (J)	<0.3	<0.3	<0.3	0.053 (J)	<0.3			
3/3/2020							<0.3	0.064 (J)	<0.3
3/25/2020	0.098 (J)	<0.3	<0.3			<0.3			
3/26/2020				<0.3	0.066 (J)			<0.3	
3/30/2020							0.092 (J)		0.059 (J)

Time Series

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.3	
5/24/2016		<0.3
7/12/2016	0.09 (J)	0.54
9/1/2016	0.03 (J)	0.49
10/25/2016	0.07 (J)	0.58
12/7/2016	0.54	
12/8/2016		0.63
1/26/2017	<0.3	0.71
3/22/2017	0.07 (J)	
3/23/2017		0.57
5/25/2017	0.42	0.54
10/4/2017	0.93	0.95
4/3/2018	<0.3	0.33
6/5/2018		0.66
6/6/2018	0.23 (J)	
10/3/2018	<0.3	0.32
3/14/2019		0.88
3/15/2019	<0.3	
4/5/2019	0.16 (J)	0.37
9/25/2019	0.081 (J)	0.73
3/3/2020	<0.3	0.34
3/31/2020	<0.3	0.45

Time Series

Constituent: Lead (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.005	<0.005	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
5/23/2016							0.00182 (J)	<0.005	<0.005
7/11/2016	<0.005	<0.005		<0.005	<0.005	<0.005			
7/12/2016			0.0001 (J)				0.0015 (J)	<0.005	<0.005
8/30/2016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
9/1/2016							0.0016 (J)	<0.005	<0.005
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					0.0002 (J)	<0.005			
10/24/2016							0.0016 (J)	<0.005	
10/25/2016									<0.005
12/6/2016	<0.005	<0.005	<0.005	0.0002 (J)					
12/7/2016							0.0018 (J)	<0.005	<0.005
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
1/26/2017							0.002 (J)	<0.005	0.0001 (J)
3/21/2017	<0.005	6E-05 (J)	0.0001 (J)	<0.005	<0.005	<0.005			
3/22/2017									0.0002 (J)
3/23/2017							0.0019 (J)	0.001 (J)	
5/22/2017	<0.005	9E-05 (J)	<0.005						
5/23/2017				<0.005	9E-05 (J)	0.0003 (J)			
5/24/2017							0.0016 (J)	0.0001 (J)	0.0001 (J)
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005		<0.005	<0.005
4/4/2018							<0.005		
3/11/2019				<0.005					
3/12/2019	<0.005	<0.005	<0.005		<0.005	<0.005			
3/14/2019							0.0014 (J)	<0.005	
3/15/2019									<0.005
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019								7.2E-05 (J)	0.00016 (J)
4/5/2019							0.0012 (J)		
9/23/2019	7.8E-05 (J)	9.2E-05 (J)	<0.005						
9/24/2019				<0.005	<0.005	7.1E-05 (J)	0.0013 (J)	0.0002 (J)	
9/25/2019									<0.005
3/2/2020	4.8E-05 (J)	9.5E-05 (J)	<0.005	0.00026 (J)	<0.005	<0.005			
3/3/2020							0.0017 (J)	5.3E-05 (J)	0.00016 (J)
3/25/2020	<0.005	0.00011 (J)	<0.005			<0.005			
3/26/2020				5.9E-05 (J)	<0.005			<0.005	
3/30/2020							0.0015 (J)		7.3E-05 (J)

Time Series

Constituent: Lead (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.005	
5/24/2016		0.00154 (J)
7/12/2016	<0.005	0.0012 (J)
9/1/2016	<0.005	0.0014 (J)
10/25/2016	<0.005	0.0015 (J)
12/7/2016	<0.005	
12/8/2016		0.0017 (J)
1/26/2017	<0.005	0.0013 (J)
3/22/2017	0.0001 (J)	
3/23/2017		0.001 (J)
5/25/2017	<0.005	0.0012 (J)
4/3/2018	<0.005	<0.005
3/14/2019		0.0015 (J)
3/15/2019	<0.005	
4/5/2019	7.6E-05 (J)	0.0015 (J)
9/25/2019	8.9E-05 (J)	0.0015 (J)
3/3/2020	0.00013 (J)	0.0013 (J)
3/31/2020	7.7E-05 (J)	0.0014 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.03	<0.03	<0.03	<0.03	<0.03				
5/20/2016						<0.03			
5/23/2016							<0.03	<0.03	<0.03
7/11/2016	<0.03	0.0014 (J)		0.0015 (J)	0.0034 (J)	0.01 (J)			
7/12/2016			0.0024 (J)				<0.03	<0.03	0.0037 (J)
8/30/2016	<0.03	<0.03	0.0025 (J)	0.0027 (J)	0.003 (J)	0.0095 (J)			
9/1/2016							<0.03	0.0021 (J)	0.0033 (J)
10/19/2016	<0.03	<0.03	0.003 (J)	0.0042 (J)					
10/20/2016					0.0031 (J)	0.0105 (J)			
10/24/2016							<0.03	<0.03	
10/25/2016									0.0029 (J)
12/6/2016	<0.03	<0.03	0.0033 (J)	0.0046 (J)					
12/7/2016							<0.03	<0.03	0.0029 (J)
12/8/2016					0.0027 (J)	0.01 (J)			
1/24/2017	<0.03	<0.03	0.003 (J)	<0.03	0.0028 (J)	0.0108 (J)			
1/26/2017							<0.03	<0.03	0.0028 (J)
3/21/2017	<0.03	0.0012 (J)	0.0034 (J)	<0.03	0.0037 (J)	0.0115 (J)			
3/22/2017									0.0025 (J)
3/23/2017							<0.03	0.0016 (J)	
5/22/2017	<0.03	<0.03	0.003 (J)						
5/23/2017				<0.03	0.0033 (J)	0.011 (J)			
5/24/2017							<0.03	0.0029 (J)	0.0029 (J)
4/2/2018	<0.03	0.0015 (J)		<0.03					
4/3/2018			0.003 (J)		0.0033 (J)	0.012 (J)		0.0026 (J)	0.0028 (J)
4/4/2018							<0.03		
6/4/2018	0.001 (J)	0.0016 (J)	0.0027 (J)	0.00097 (J)					
6/5/2018					0.0034 (J)	0.011 (J)			
6/6/2018							<0.03	0.0013 (J)	0.0031 (J)
10/1/2018	0.00099 (J)	0.0013 (J)	0.0032 (J)	<0.03					
10/2/2018					0.0035 (J)	0.01 (J)			
10/3/2018							<0.03	0.0017 (J)	0.0026 (J)
3/11/2019				<0.03					
3/12/2019	0.001 (J)	0.0018 (J)	0.0032 (J)		0.0032 (J)	0.011 (J)			
3/14/2019							<0.03	<0.03	
3/15/2019									0.0041 (J)
4/1/2019			0.0032 (J)						
4/2/2019	0.001 (J)	0.0018 (J)		0.00098 (J)	0.0028 (J)	0.0095 (J)			
4/4/2019								0.0009 (J)	0.0032 (J)
4/5/2019							<0.03		
9/23/2019	0.0011 (J)	0.0016 (J)	0.0029 (J)						
9/24/2019				<0.03	0.0035 (J)	0.011 (J)	<0.03	0.0012 (J)	
9/25/2019									0.0038 (J)
3/2/2020	0.0012 (J)	0.0017 (J)	0.0037 (J)	0.0012 (J)	0.0036 (J)	0.012			
3/3/2020							<0.03	0.0084 (J)	0.0047 (J)
3/25/2020	0.00083 (J)	0.0017 (J)	0.0035 (J)			0.011 (J)			
3/26/2020				0.00095 (J)	0.0029 (J)			0.0061 (J)	
3/30/2020							<0.03		0.0041 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.03	
5/24/2016		0.0142 (J)
7/12/2016	<0.03	0.0141 (J)
9/1/2016	<0.03	0.0158 (J)
10/25/2016	<0.03	0.016 (J)
12/7/2016	<0.03	
12/8/2016		0.0144 (J)
1/26/2017	<0.03	0.0136 (J)
3/22/2017	<0.03	
3/23/2017		0.0151 (J)
5/25/2017	0.0011 (J)	0.0154 (J)
4/3/2018	<0.03	0.013 (J)
6/5/2018		0.013 (J)
6/6/2018	<0.03	
10/3/2018	<0.03	0.015 (J)
3/14/2019		0.011 (J)
3/15/2019	0.0011 (J)	
4/5/2019	0.00074 (J)	0.0084 (J)
9/25/2019	0.0011 (J)	0.015 (J)
3/3/2020	0.0012 (J)	0.012 (J)
3/31/2020	0.0009 (J)	0.012 (J)

Time Series

Constituent: Mercury (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				
5/20/2016						<0.0005			
5/23/2016							<0.0005	<0.0005	<0.0005
7/11/2016	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005			
7/12/2016			<0.0005				<0.0005	<0.0005	<0.0005
8/30/2016	4E-05 (J)	4E-05 (J)	<0.0005	5E-05 (J)	<0.0005	4.4E-05 (J)			
9/1/2016							<0.0005	<0.0005	<0.0005
10/19/2016	<0.0005	<0.0005	<0.0005	<0.0005					
10/20/2016					<0.0005	<0.0005			
10/24/2016							<0.0005	<0.0005	
10/25/2016									<0.0005
12/6/2016	<0.0005	<0.0005	<0.0005	5E-05 (J)					
12/7/2016							<0.0005	<0.0005	<0.0005
12/8/2016					<0.0005	<0.0005			
1/24/2017	<0.0005	<0.0005	<0.0005	0.0001 (J)	<0.0005	<0.0005			
1/26/2017							<0.0005	<0.0005	<0.0005
3/21/2017	<0.0005	<0.0005	<0.0005	0.00016 (J)	<0.0005	<0.0005			
3/22/2017									<0.0005
3/23/2017							<0.0005	<0.0005	
5/22/2017	<0.0005	<0.0005	<0.0005						
5/23/2017				5E-05 (J)	<0.0005	<0.0005			
5/24/2017							<0.0005	<0.0005	<0.0005
4/2/2018	<0.0005	<0.0005		<0.0005					
4/3/2018			<0.0005		<0.0005	<0.0005		<0.0005	<0.0005
4/4/2018							<0.0005		
3/11/2019				<0.0005					
3/12/2019	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005			
3/14/2019							<0.0005	<0.0005	
3/15/2019									<0.0005
3/2/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			
3/3/2020							<0.0005	<0.0005	<0.0005

Time Series

Constituent: Mercury (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.0005	
5/24/2016		<0.0005
7/12/2016	<0.0005	<0.0005
9/1/2016	<0.0005	6E-05 (J)
10/25/2016	<0.0005	4E-05 (J)
12/7/2016	<0.0005	
12/8/2016		<0.0005
1/26/2017	<0.0005	8E-05 (J)
3/22/2017	<0.0005	
3/23/2017		9E-05 (J)
5/25/2017	<0.0005	8E-05 (J)
4/3/2018	<0.0005	<0.0005
3/14/2019		<0.0005
3/15/2019	<0.0005	
3/3/2020	<0.0005	<0.0005

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
5/23/2016							<0.01	<0.01	<0.01
7/11/2016	<0.01	<0.01		<0.01	<0.01	0.0008 (J)			
7/12/2016			<0.01				<0.01	0.0007 (J)	<0.01
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/1/2016							<0.01	<0.01	<0.01
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
10/24/2016							<0.01	<0.01	
10/25/2016									<0.01
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/7/2016							<0.01	<0.01	<0.01
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
1/26/2017							<0.01	<0.01	<0.01
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	0.0002 (J)			
3/22/2017									<0.01
3/23/2017							<0.01	<0.01	
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
5/24/2017							<0.01	<0.01	<0.01
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01		<0.01	<0.01
4/4/2018							<0.01		
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019							<0.01	<0.01	
3/15/2019									<0.01
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019								<0.01	<0.01
4/5/2019							<0.01		
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01	<0.01	<0.01	
9/25/2019									<0.01
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/3/2020							<0.01	<0.01	<0.01
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01			<0.01	
3/30/2020							<0.01		<0.01

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.01	
5/24/2016		<0.01
7/12/2016	<0.01	<0.01
9/1/2016	<0.01	<0.01
10/25/2016	<0.01	<0.01
12/7/2016	<0.01	
12/8/2016		<0.01
1/26/2017	<0.01	<0.01
3/22/2017	<0.01	
3/23/2017		<0.01
5/25/2017	<0.01	<0.01
4/3/2018	<0.01	<0.01
3/14/2019		<0.01
3/15/2019	<0.01	
4/5/2019	<0.01	<0.01
9/25/2019	<0.01	<0.01
3/3/2020	<0.01	<0.01
3/31/2020	<0.01	<0.01

Time Series

Constituent: Selenium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
5/23/2016							0.017	<0.01	<0.01
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01				0.0146	<0.01	<0.01
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/1/2016							0.0137	<0.01	<0.01
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
10/24/2016							0.0135	0.0012 (J)	
10/25/2016									<0.01
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/7/2016							0.01 (J)	0.0041 (J)	<0.01
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	0.0011 (J)	<0.01			
1/26/2017							0.0214	<0.01	<0.01
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/22/2017									<0.01
3/23/2017							0.0167	0.0016 (J)	
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
5/24/2017							0.0083 (J)	<0.01	<0.01
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01		<0.01	<0.01
4/4/2018							0.012		
6/4/2018	<0.01	<0.01	<0.01	<0.01					
6/5/2018					<0.01	<0.01			
6/6/2018							0.014	<0.01	<0.01
10/1/2018	<0.01	<0.01	<0.01	<0.01					
10/2/2018					<0.01	<0.01			
10/3/2018							0.0056 (J)	<0.01	<0.01
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019							0.0048 (J)	<0.01	
3/15/2019									<0.01
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019								0.00021 (J)	8.9E-05 (J)
4/5/2019							0.00091 (J)		
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01	0.0064 (J)	<0.01	
9/25/2019									<0.01
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/3/2020							0.0045 (J)	<0.01	<0.01
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01			<0.01	
3/30/2020							0.0049 (J)		<0.01

Time Series

Constituent: Selenium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.01	
5/24/2016		<0.01
7/12/2016	<0.01	0.036
9/1/2016	0.0014 (J)	0.0347
10/25/2016	<0.01	0.0282
12/7/2016	0.0023 (J)	
12/8/2016		0.0373
1/26/2017	<0.01	0.0385
3/22/2017	<0.01	
3/23/2017		0.0414
5/25/2017	<0.01	0.019
4/3/2018	<0.01	0.029
6/5/2018		0.038
6/6/2018	<0.01	
10/3/2018	<0.01	0.017
3/14/2019		0.016
3/15/2019	<0.01	
4/5/2019	9.3E-05 (J)	0.0018 (J)
9/25/2019	<0.01	0.02
3/3/2020	<0.01	0.014
3/31/2020	<0.01	0.019

Time Series

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	66.9	48.6	42.3	1.22	25				
5/20/2016						34.4			
5/23/2016							1070	424	203
7/11/2016	41	45		3.7	27	34			
7/12/2016			44				1300	440	220
8/30/2016	36	42	40	6.8	23	36			
9/1/2016							1300	440	220
10/19/2016	46	44	43	11					
10/20/2016					19	36			
10/24/2016							280	420	
10/25/2016									230
12/6/2016	59	44	43	13					
12/7/2016							1300	450	220
12/8/2016					20	36			
1/24/2017	46	46	48	5.7	20	37			
1/26/2017							1400	490	250
3/21/2017	63	46	45	1.7	23	37			
3/22/2017									240
3/23/2017							1500	530	
5/22/2017	77	48	46						
5/23/2017				1.5	21	38			
5/24/2017							1400	500	230
10/3/2017	42	47	48	1.3	21	38			
10/4/2017							1400	560	220
6/4/2018	71.8	47.8	46.6	4.9					
6/5/2018					22.9	38			
6/6/2018							1520	469	233
10/1/2018	49.1	48.1	48.6	0.59 (J)					
10/2/2018					20.3	38.5			
10/3/2018							1550	600	215
4/1/2019			50.4						
4/2/2019	84.3	48.7		4.9	23.8	35.5			
4/4/2019								528	251
4/5/2019							1520		
9/23/2019	70.2	47.2	43.9						
9/24/2019				<1	20.7	35.4	1110	382	
9/25/2019									223
3/25/2020	85.9	46.3	50.5			35.1			
3/26/2020				<1	21.6			438	
3/30/2020							1150		223

Time Series

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	395	
5/24/2016		834
7/12/2016	460	930
9/1/2016	430	890
10/25/2016	440	950
12/7/2016	410	
12/8/2016		910
1/26/2017	440	970
3/22/2017	460	
3/23/2017		980
5/25/2017	430	920
10/4/2017	490	870
6/5/2018		962
6/6/2018	520	
10/3/2018	651	1170
4/5/2019	642	1030
9/25/2019	434	920
3/31/2020	484	934

Time Series

Constituent: Thallium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.001	<0.001	<0.001	<0.001	<0.001				
5/20/2016						<0.001			
5/23/2016							0.000306 (J)	<0.001	<0.001
7/11/2016	<0.001	<0.001		<0.001	<0.001	<0.001			
7/12/2016			<0.001				0.0003 (J)	<0.001	<0.001
8/30/2016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
9/1/2016							0.0003 (J)	<0.001	<0.001
10/19/2016	<0.001	<0.001	<0.001	<0.001					
10/20/2016					<0.001	<0.001			
10/24/2016							0.0004	<0.001	
10/25/2016									<0.001
12/6/2016	<0.001	<0.001	<0.001	<0.001					
12/7/2016							0.0003 (J)	<0.001	<0.001
12/8/2016					<0.001	<0.001			
1/24/2017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
1/26/2017							0.0003 (J)	<0.001	<0.001
3/21/2017	<0.001	3E-05 (J)	<0.001	<0.001	<0.001	<0.001			
3/22/2017									<0.001
3/23/2017							0.0003 (J)	<0.001	
5/22/2017	<0.001	<0.001	<0.001						
5/23/2017				<0.001	<0.001	<0.001			
5/24/2017							0.0003 (J)	<0.001	<0.001
4/2/2018	<0.001	<0.001		<0.001					
4/3/2018			<0.001		<0.001	<0.001		<0.001	<0.001
4/4/2018							0.00028 (J)		
6/4/2018	<0.001	<0.001	<0.001	<0.001					
6/5/2018					<0.001	<0.001			
6/6/2018							0.00029 (J)	<0.001	<0.001
10/1/2018	<0.001	<0.001	<0.001	<0.001					
10/2/2018					<0.001	<0.001			
10/3/2018							0.00029 (J)	<0.001	<0.001
3/11/2019				<0.001					
3/12/2019	<0.001	<0.001	<0.001		<0.001	<0.001			
3/14/2019							0.00028 (J)	<0.001	
3/15/2019									<0.001
4/1/2019			<0.001						
4/2/2019	<0.001	<0.001		<0.001	<0.001	<0.001			
4/4/2019								<0.001	<0.001
4/5/2019							0.00028 (J)		
9/23/2019	<0.001	<0.001	<0.001						
9/24/2019				<0.001	<0.001	<0.001	0.0003 (J)	<0.001	
9/25/2019									<0.001
3/2/2020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
3/3/2020							0.00026 (J)	<0.001	<0.001
3/25/2020	<0.001	<0.001	<0.001			5.7E-05 (J)			
3/26/2020				<0.001	<0.001			<0.001	
3/30/2020							0.00028 (J)		<0.001

Time Series

Constituent: Thallium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.001	
5/24/2016		<0.001
7/12/2016	0.0001 (J)	0.0002 (J)
9/1/2016	<0.001	<0.001
10/25/2016	<0.001	<0.001
12/7/2016	<0.001	
12/8/2016		<0.001
1/26/2017	<0.001	<0.001
3/22/2017	0.0001 (J)	
3/23/2017		0.0002 (J)
5/25/2017	0.0001 (J)	0.0002 (J)
4/3/2018	<0.001	0.00014 (J)
6/5/2018		0.00016 (J)
6/6/2018	<0.001	
10/3/2018	<0.001	<0.001
3/14/2019		<0.001
3/15/2019	<0.001	
4/5/2019	0.00013 (J)	0.00014 (J)
9/25/2019	0.00012 (J)	0.00019 (J)
3/3/2020	0.00011 (J)	0.00013 (J)
3/31/2020	0.00014 (J)	0.00015 (J)

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	421	143	267	165	168				
5/20/2016						223			
5/23/2016							4130	1270	570
7/11/2016	363	125		266	158	225			
7/12/2016			249				3140	1100	585
8/30/2016	330	168	254	292	141	232			
9/1/2016							3200	1180	625
10/19/2016	380	176	357	338					
10/20/2016					99	225			
10/24/2016							2920	1090	
10/25/2016									563
12/6/2016	377	145	285	356					
12/7/2016							2740	1040	561
12/8/2016					116	235			
1/24/2017	342	129	300	131	156	272			
1/26/2017							3080	1260	608
3/21/2017	340	103	288	132	144	222			
3/22/2017									599
3/23/2017							3060	1360	
5/22/2017	338	92	263						
5/23/2017				183	134	231			
5/24/2017							3140	1320	598
10/3/2017	343	127	300	161	147	243			
10/4/2017							3210	1340	626
6/4/2018	415	140	266	240					
6/5/2018					152	235			
6/6/2018							2620	1120	678
10/1/2018	354	135	291	106					
10/2/2018					146	228			
10/3/2018							2430	1140	700
4/1/2019			284						
4/2/2019	452	133		230	144	238			
4/4/2019								926	704
4/5/2019							2310		
9/23/2019	442	129	268						
9/24/2019				131	133	222	2470	1140	
9/25/2019									813
3/25/2020	496	138	284			240			
3/26/2020				69	104			1000	
3/30/2020							2590		787

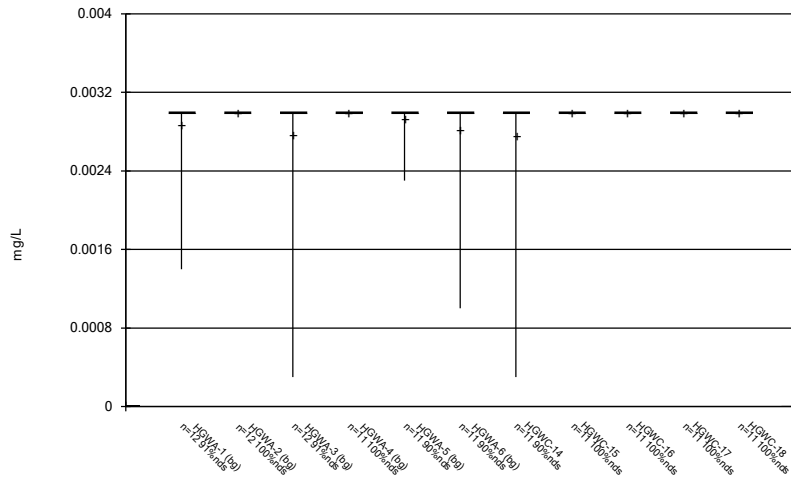
Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	1010	
5/24/2016		1900
7/12/2016	976	1950
9/1/2016	1060	2000
10/25/2016	<25	1870
12/7/2016	866	
12/8/2016		1930
1/26/2017	1000	1950
3/22/2017	1080	
3/23/2017		2080
5/25/2017	1080	1970
10/4/2017	1210	2200
6/5/2018		1880
6/6/2018	1180	
10/3/2018	1250	2180
4/5/2019	1260	1610
9/25/2019	1280	1960
3/31/2020	1310	1860

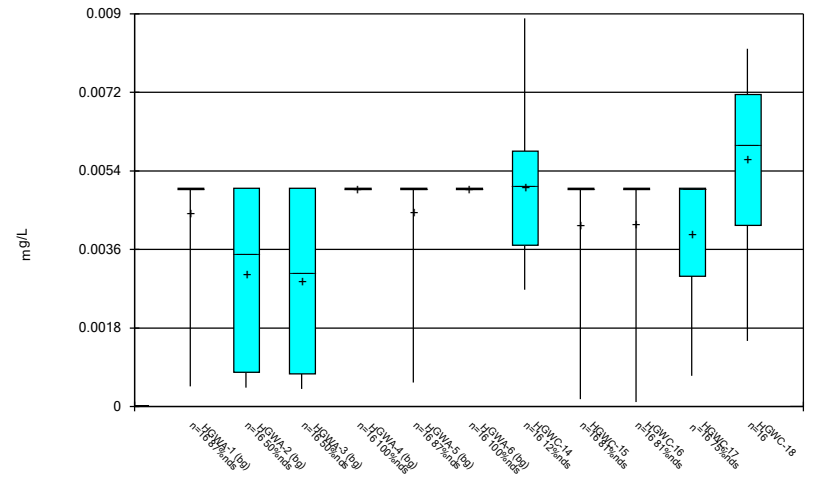
FIGURE B.

Box & Whiskers Plot



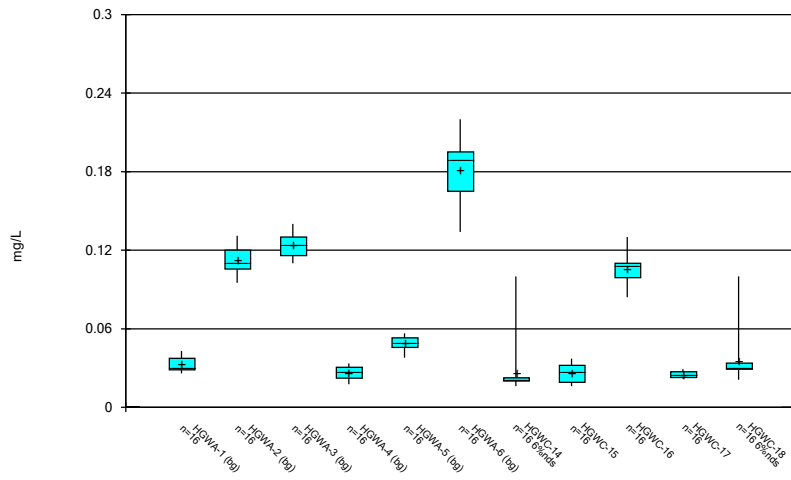
Constituent: Antimony Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



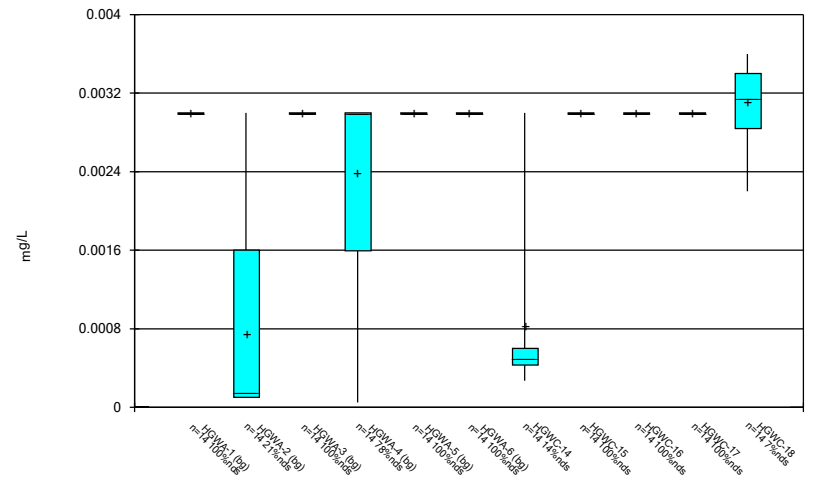
Constituent: Arsenic Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



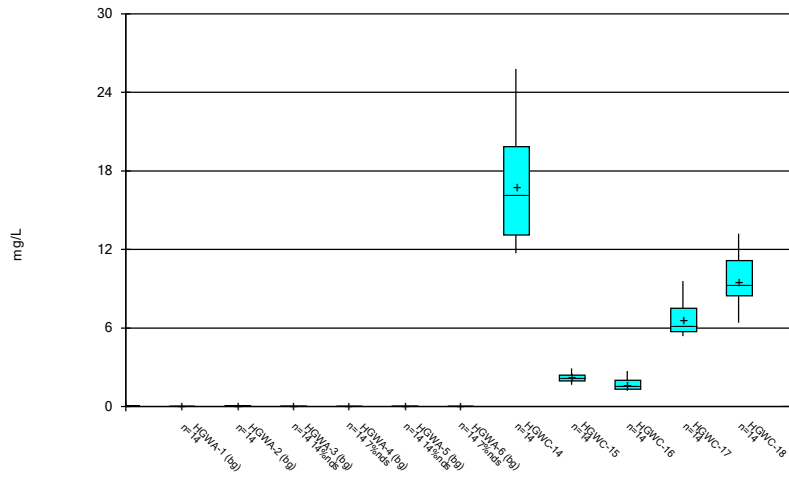
Constituent: Barium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



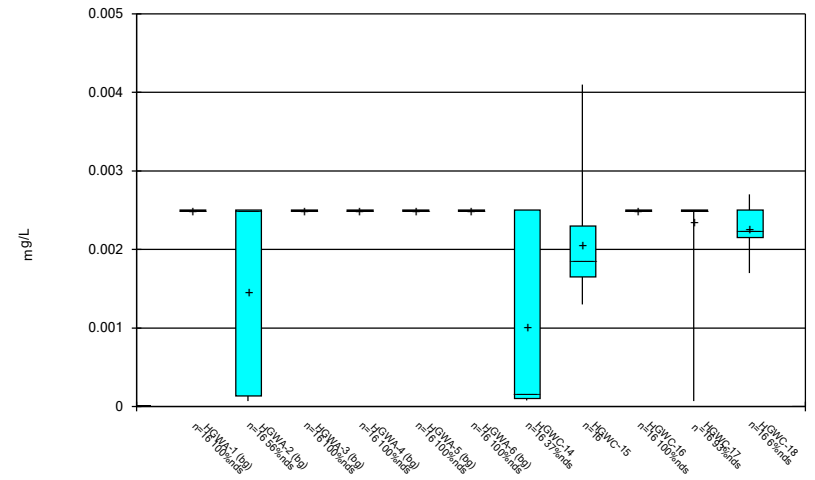
Constituent: Beryllium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



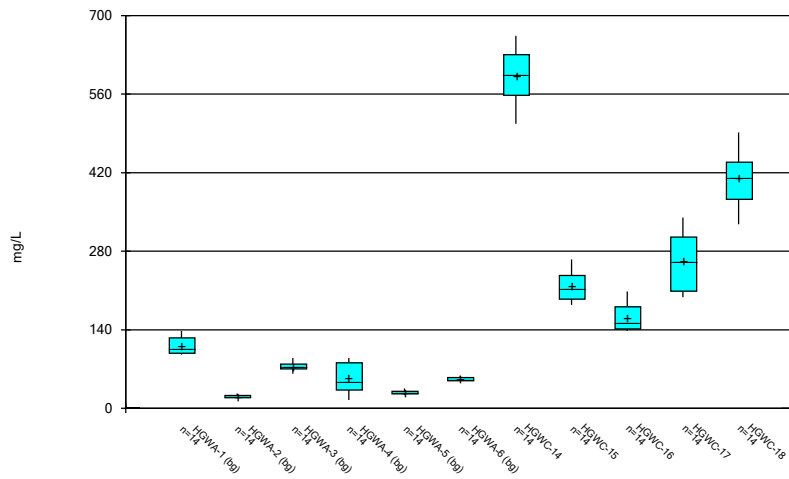
Constituent: Boron Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



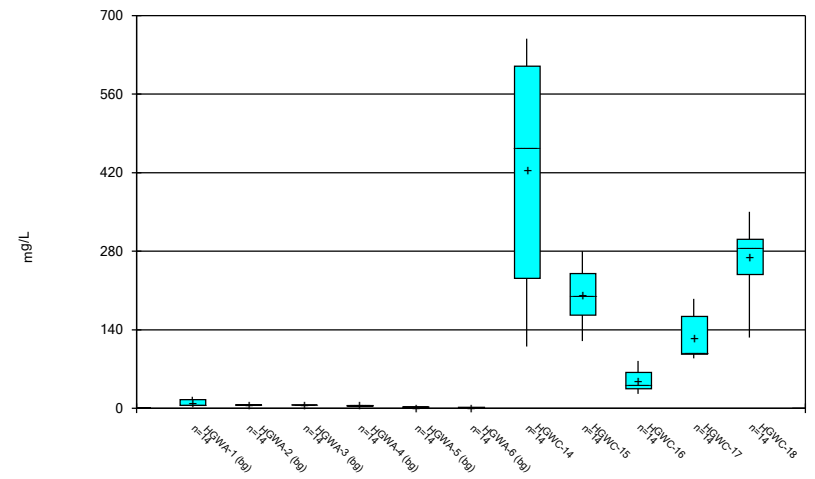
Constituent: Cadmium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



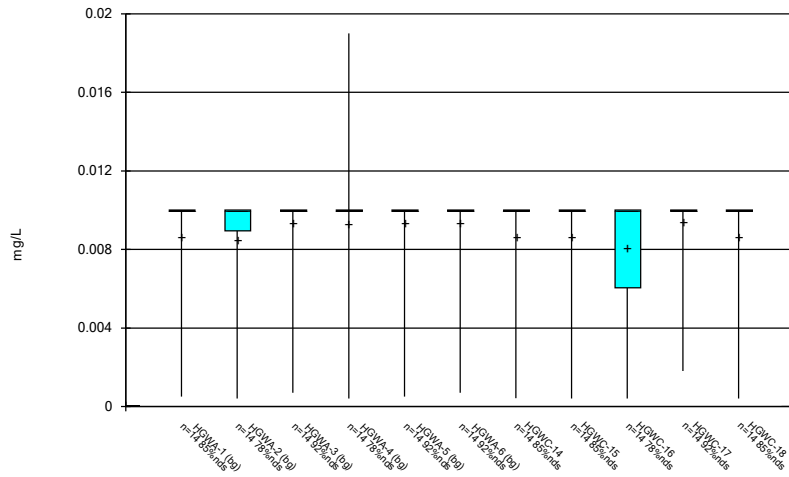
Constituent: Calcium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



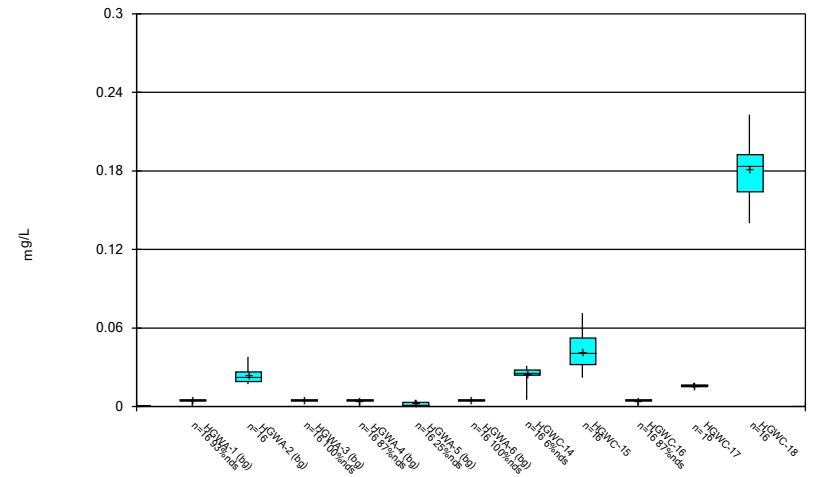
Constituent: Chloride Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



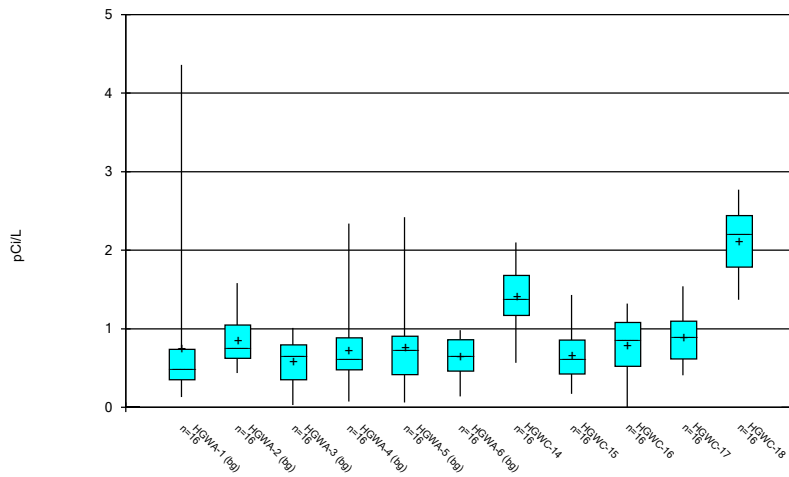
Constituent: Chromium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



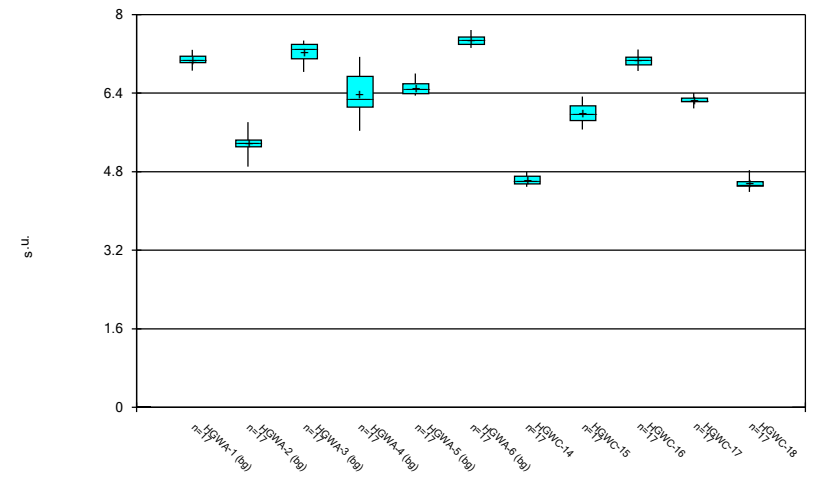
Constituent: Cobalt Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



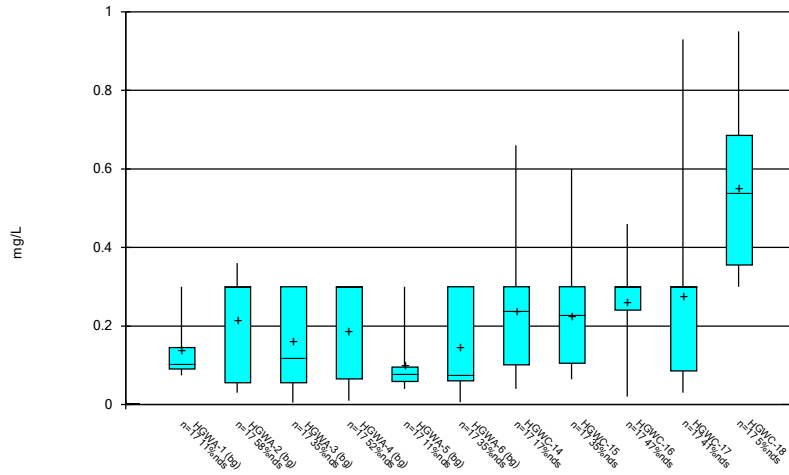
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



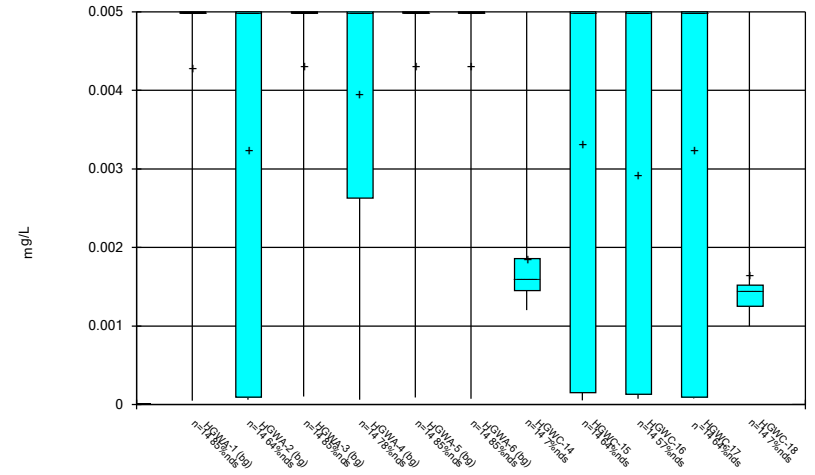
Constituent: Field pH Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



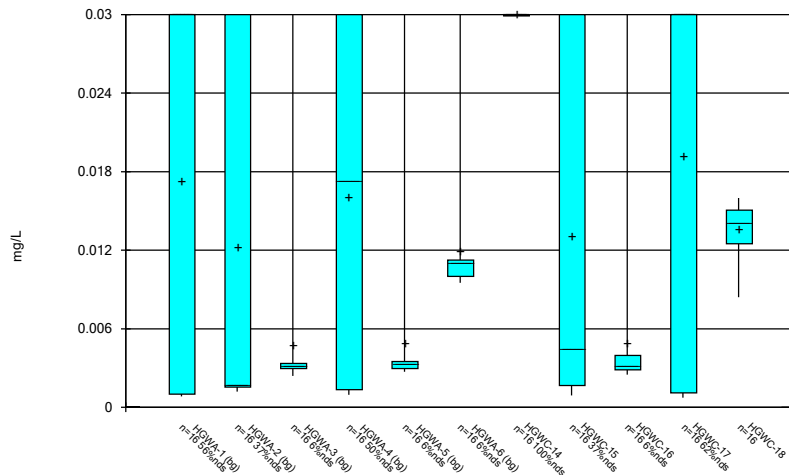
Constituent: Fluoride Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



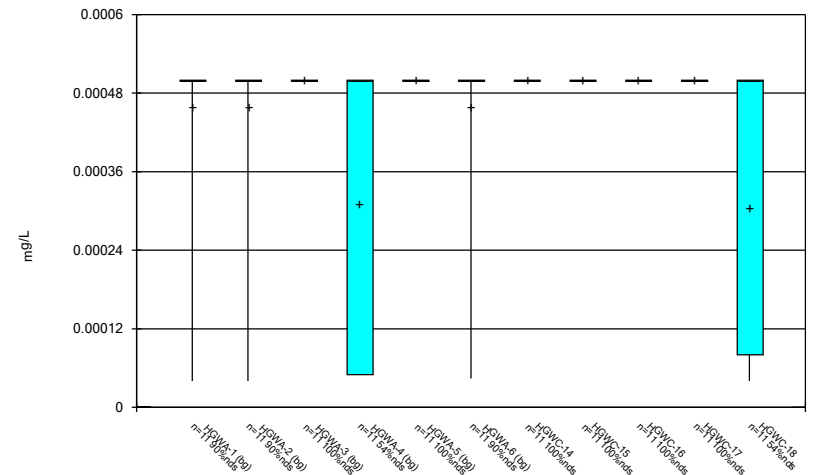
Constituent: Lead Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



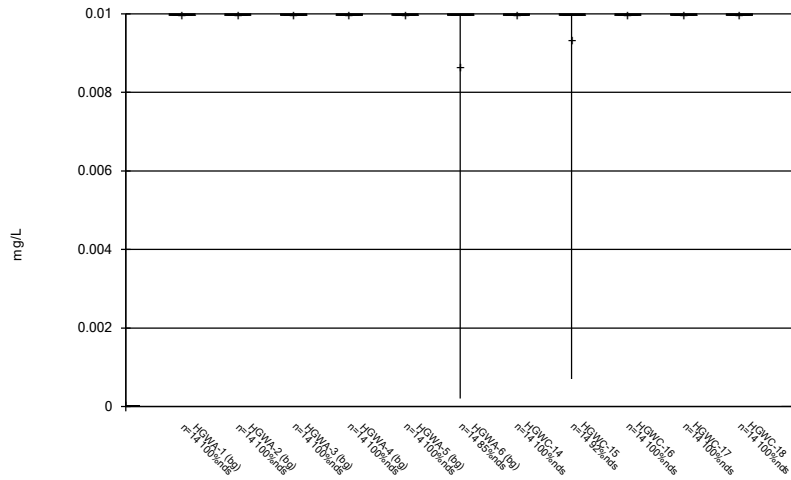
Constituent: Lithium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



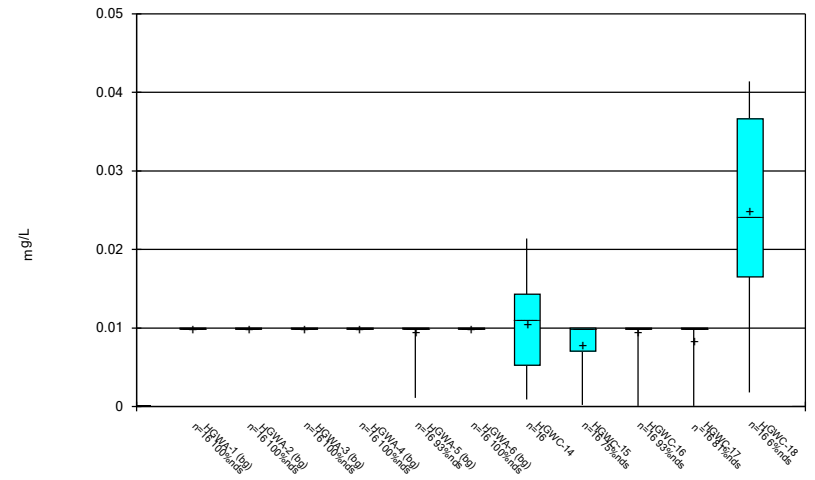
Constituent: Mercury Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



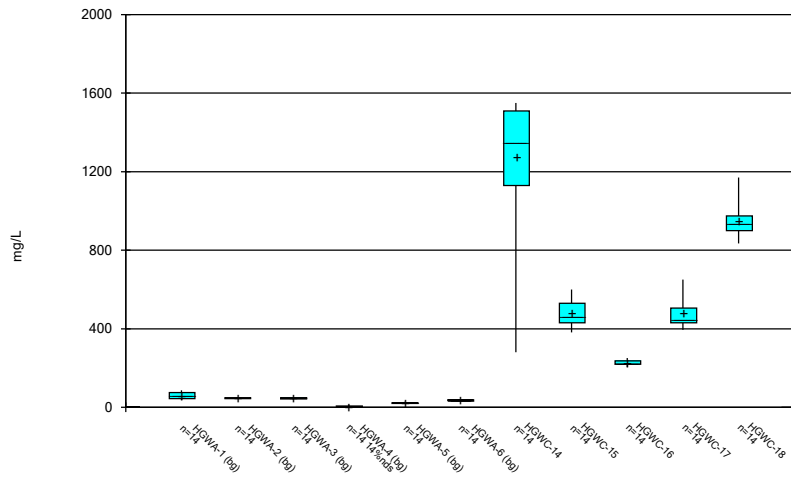
Constituent: Molybdenum Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



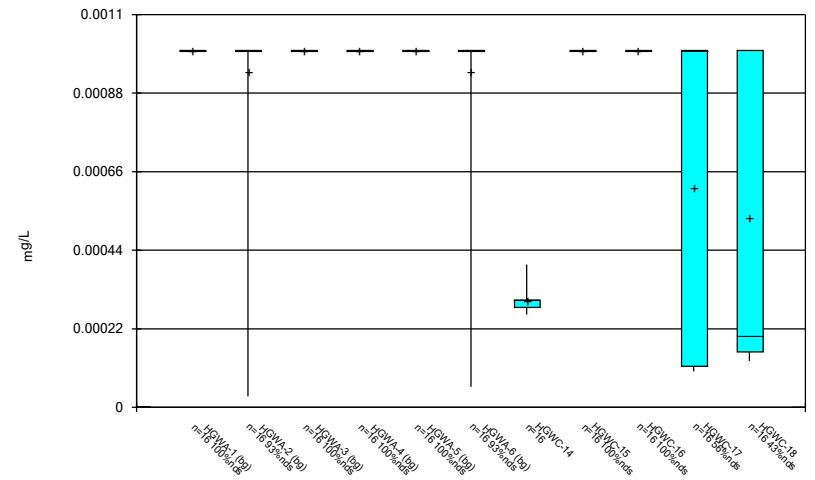
Constituent: Selenium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



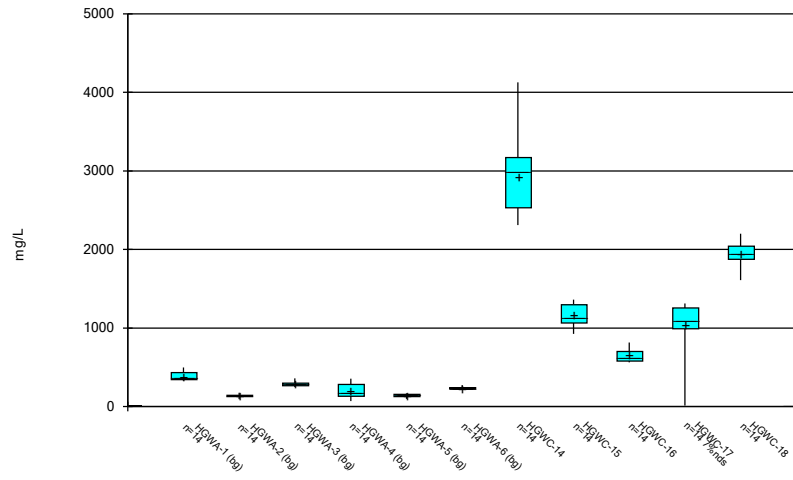
Constituent: Sulfate Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Thallium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE C.

Outlier Summary

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/7/2020, 12:23 PM

No outliers identified.

FIGURE D.

Interwell Prediction Limit Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:05 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-15	0.04409	n/a	3/26/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-16	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-17	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-18	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-14	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-15	128.9	n/a	3/26/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-16	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-17	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-18	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	3/26/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.69	4.9	3/30/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.69	4.9	3/31/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.36	n/a	3/31/2020	Yes	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	3/26/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	425	n/a	3/26/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

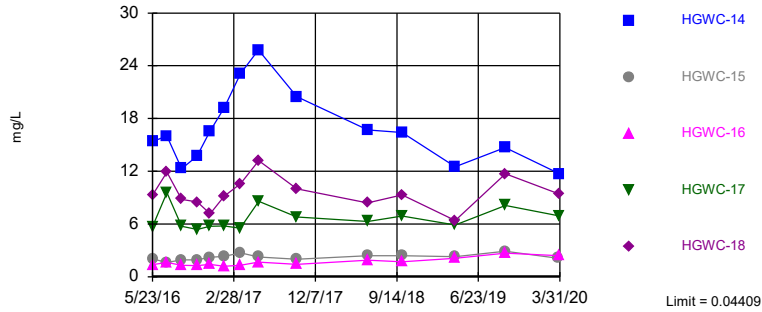
Interwell Prediction Limit Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:05 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-15	0.04409	n/a	3/26/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-16	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-17	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-18	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-14	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-15	128.9	n/a	3/26/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-16	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-17	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-18	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	3/26/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.69	4.9	3/30/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-15	7.69	4.9	3/26/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-16	7.69	4.9	3/30/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-17	7.69	4.9	3/31/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.69	4.9	3/31/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-14	0.36	n/a	3/30/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-15	0.36	n/a	3/26/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-16	0.36	n/a	3/30/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-17	0.36	n/a	3/31/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.36	n/a	3/31/2020	Yes	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	3/26/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	425	n/a	3/26/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Exceeds Limit: HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Parametric

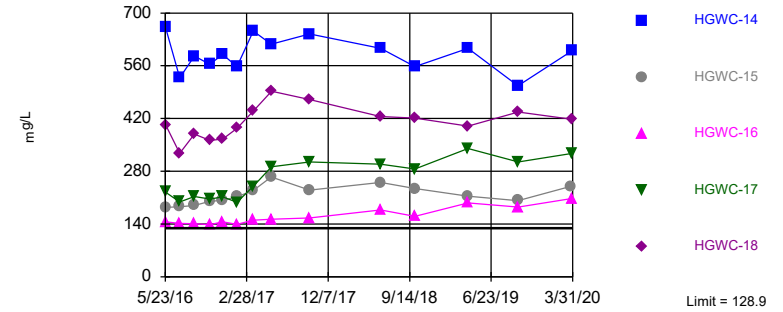


Background Data Summary (based on natural log transformation): Mean=-4.169, Std. Dev.=0.5776, n=84, 7.143% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.974, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

Constituent: Boron Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Parametric

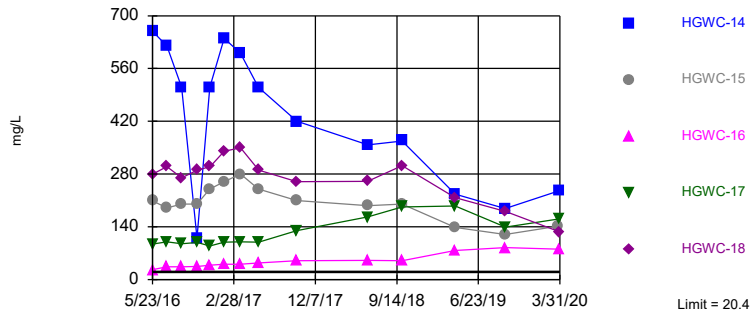


Background Data Summary (based on cube root transformation): Mean=3.704, Std. Dev.=0.743, n=84. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9612, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

Constituent: Calcium Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Non-parametric

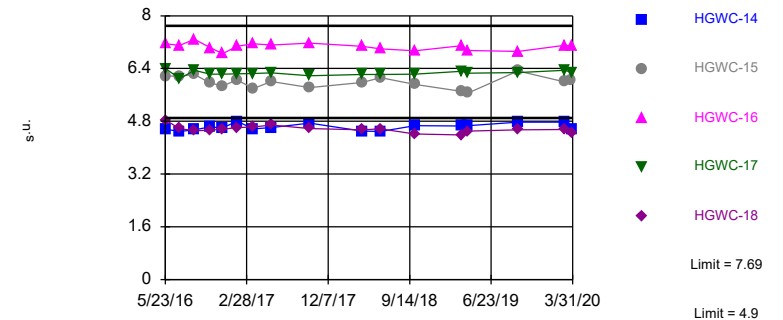


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. Annual per-constituent alpha = 0.002742. Individual comparison alpha = 0.0002746 (1 of 2). Comparing 5 points to limit.

Constituent: Chloride Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limits: HGWC-14, HGWC-18

Prediction Limit
Interwell Non-parametric

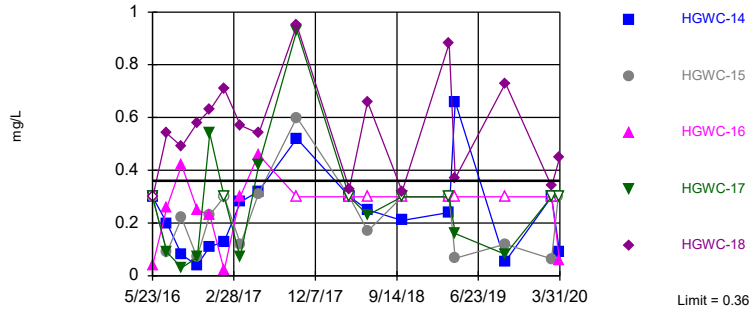


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 102 background values. Annual per-constituent alpha = 0.003748. Individual comparison alpha = 0.0003751 (1 of 2). Comparing 5 points to limit.

Constituent: Field pH Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-18

Prediction Limit
Interwell Non-parametric

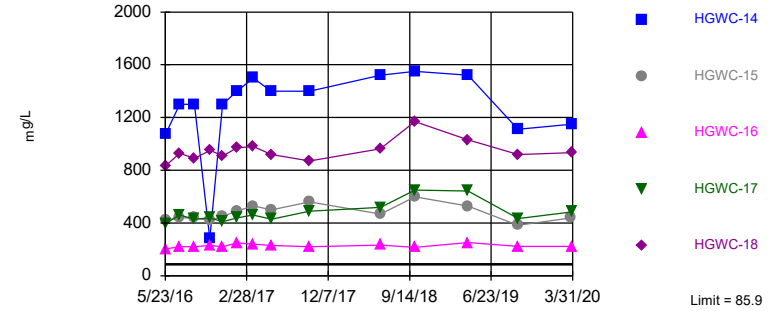


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 102 background values. 34.31% NDs. Annual per-constituent alpha = 0.001874. Individual comparison alpha = 0.0001875 (1 of 2). Comparing 5 points to limit.

Constituent: Fluoride Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15,
HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Non-parametric

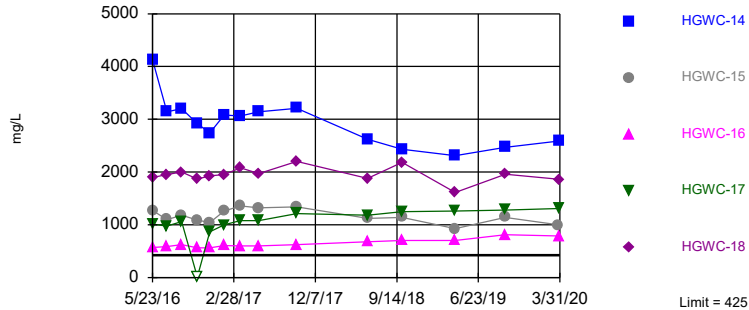


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. 2.381% NDs. Annual per-constituent alpha = 0.002742. Individual comparison alpha = 0.0002746 (1 of 2). Comparing 5 points to limit.

Constituent: Sulfate Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15,
HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Parametric



Background Data Summary (based on square root transformation): Mean=14.8, Std. Dev.=3.207, n=84. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9706, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	5.7	
5/24/2016		9.33
7/11/2016		
7/12/2016	9.58	11.9
8/30/2016		
9/1/2016	5.76	8.8
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	5.38	8.5
12/6/2016		
12/7/2016	5.74	
12/8/2016		7.15
1/24/2017		
1/26/2017	5.78	9.17
3/21/2017		
3/22/2017	5.52	
3/23/2017		10.6
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	8.58	13.2
10/3/2017		
10/4/2017	6.8	10
6/4/2018		
6/5/2018		8.4
6/6/2018	6.3	
10/1/2018		
10/2/2018		
10/3/2018	6.9	9.3
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	5.9	6.4
9/23/2019		
9/24/2019		
9/25/2019	8.1	11.7
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	6.9	9.4

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	225	
5/24/2016		403
7/11/2016		
7/12/2016	199	328
8/30/2016		
9/1/2016	213	379
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	206	362
12/6/2016		
12/7/2016	212	
12/8/2016		366
1/24/2017		
1/26/2017	198	394
3/21/2017		
3/22/2017	239	
3/23/2017		440
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	292	492
10/3/2017		
10/4/2017	305	470
6/4/2018		
6/5/2018		425
6/6/2018	299	
10/1/2018		
10/2/2018		
10/3/2018	286	421
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	340	400
9/23/2019		
9/24/2019		
9/25/2019	305	437
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	328	418

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	94	
5/24/2016		280
7/11/2016		
7/12/2016	100	300
8/30/2016		
9/1/2016	95	270
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	98	290
12/6/2016		
12/7/2016	89	
12/8/2016		300
1/24/2017		
1/26/2017	99	340
3/21/2017		
3/22/2017	100	
3/23/2017		350
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	99	290
10/3/2017		
10/4/2017	130	260
6/4/2018		
6/5/2018		261
6/6/2018	166	
10/1/2018		
10/2/2018		
10/3/2018	193	302
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	195	217
9/23/2019		
9/24/2019		
9/25/2019	139	181
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	161	126

Prediction Limit

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-16	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	7.15	
5/24/2016		4.83
7/11/2016		
7/12/2016	7.1	4.58
8/30/2016		
9/1/2016	7.29	4.51
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	7.03	4.53
12/6/2016		
12/7/2016	6.85	
12/8/2016		4.56
1/24/2017		
1/26/2017	7.07	4.61
3/21/2017		
3/22/2017	7.15	
3/23/2017		4.63
5/22/2017		
5/23/2017		
5/24/2017	7.11	
5/25/2017		4.69
10/3/2017		
10/4/2017	7.17	4.58
4/2/2018		
4/3/2018	7.07	4.54
4/4/2018		
6/4/2018		
6/5/2018		4.57
6/6/2018	7	
10/1/2018		
10/2/2018		
10/3/2018	6.94	4.41
3/11/2019		
3/12/2019		
3/14/2019		4.39
3/15/2019	7.09	
4/1/2019		
4/2/2019		
4/4/2019	6.95	
4/5/2019		4.5
9/23/2019		
9/24/2019		
9/25/2019	6.92	4.54
3/2/2020		
3/3/2020	7.1	4.55
3/25/2020		
3/26/2020		
3/30/2020	7.09	
3/31/2020		4.43

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-16	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	0.038 (J)	
5/24/2016		<0.3
7/11/2016		
7/12/2016	0.26 (J)	0.54
8/30/2016		
9/1/2016	0.42	0.49
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	0.25 (J)	0.58
12/6/2016		
12/7/2016	0.23 (J)	
12/8/2016		0.63
1/24/2017		
1/26/2017	0.02 (J)	0.71
3/21/2017		
3/22/2017	0.3	
3/23/2017		0.57
5/22/2017		
5/23/2017		
5/24/2017	0.46	
5/25/2017		0.54
10/3/2017		
10/4/2017	<0.3	0.95
4/2/2018		
4/3/2018	<0.3	0.33
4/4/2018		
6/4/2018		
6/5/2018		0.66
6/6/2018	<0.3	
10/1/2018		
10/2/2018		
10/3/2018	<0.3	0.32
3/11/2019		
3/12/2019		
3/14/2019		0.88
3/15/2019	<0.3	
4/1/2019		
4/2/2019		
4/4/2019	<0.3	
4/5/2019		0.37
9/23/2019		
9/24/2019		
9/25/2019	<0.3	0.73
3/2/2020		
3/3/2020	<0.3	0.34
3/25/2020		
3/26/2020		
3/30/2020	0.059 (J)	
3/31/2020		0.45

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	395	
5/24/2016		834
7/11/2016		
7/12/2016	460	930
8/30/2016		
9/1/2016	430	890
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	440	950
12/6/2016		
12/7/2016	410	
12/8/2016		910
1/24/2017		
1/26/2017	440	970
3/21/2017		
3/22/2017	460	
3/23/2017		980
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	430	920
10/3/2017		
10/4/2017	490	870
6/4/2018		
6/5/2018		962
6/6/2018	520	
10/1/2018		
10/2/2018		
10/3/2018	651	1170
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	642	1030
9/23/2019		
9/24/2019		
9/25/2019	434	920
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	484	934

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	1010	
5/24/2016		1900
7/11/2016		
7/12/2016	976	1950
8/30/2016		
9/1/2016	1060	2000
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	<25	1870
12/6/2016		
12/7/2016	866	
12/8/2016		1930
1/24/2017		
1/26/2017	1000	1950
3/21/2017		
3/22/2017	1080	
3/23/2017		2080
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	1080	1970
10/3/2017		
10/4/2017	1210	2200
6/4/2018		
6/5/2018		1880
6/6/2018	1180	
10/1/2018		
10/2/2018		
10/3/2018	1250	2180
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	1260	1610
9/23/2019		
9/24/2019		
9/25/2019	1280	1960
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	1310	1860

FIGURE E.

Trend Test Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

<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-16	0.2753	55	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	17.5	53	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	15.21	66	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	35.54	56	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-115.1	-52	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	14.55	83	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	20.15	59	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.9	63	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	96.37	70	48	Yes	14	7.143	n/a	n/a	0.01	NP

Trend Test Summary -All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	0.0007668	9	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-2 (bg)	0.001791	45	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-3 (bg)	-0.0007135	-19	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-4 (bg)	-0.001746	-37	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-5 (bg)	-0.0004406	-14	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-6 (bg)	-0.001046	-21	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-14	-0.2096	-5	-48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-15	0.1514	41	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-16	0.2753	55	48	Yes	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-17	0.3065	30	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-18	-0.0127	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-1 (bg)	6.687	43	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-2 (bg)	-0.1393	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-3 (bg)	3.531	39	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-4 (bg)	-7.131	-29	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-5 (bg)	-0.6566	-14	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-6 (bg)	0.6134	15	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-14	-5.896	-7	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	17.5	53	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	15.21	66	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	35.54	56	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-18	16.36	31	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-1 (bg)	1.469	22	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-2 (bg)	-0.1372	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-3 (bg)	0	-4	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-5 (bg)	-0.09359	-18	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-6 (bg)	-0.05984	-20	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-115.1	-52	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-15	-21.33	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	14.55	83	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	20.15	59	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-18	-29.64	-33	-48	No	14	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-1 (bg)	-0.04693	-50	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-2 (bg)	-0.054	-32	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-3 (bg)	-0.009832	-11	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.2248	-59	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-5 (bg)	-0.04139	-35	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-6 (bg)	-0.02795	-29	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-14	0.04005	42	63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-18	-0.03755	-48	-63	No	17	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-1 (bg)	-0.002837	-12	-63	No	17	11.76	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-2 (bg)	0	29	63	No	17	58.82	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-3 (bg)	0.04945	43	63	No	17	35.29	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-4 (bg)	0.03355	49	63	No	17	52.94	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-5 (bg)	-0.003266	-16	-63	No	17	11.76	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-6 (bg)	0.03185	42	63	No	17	35.29	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-18	0.009528	7	63	No	17	5.882	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-1 (bg)	8.572	44	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-2 (bg)	1.136	35	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-4 (bg)	-0.7339	-37	-48	No	14	14.29	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-5 (bg)	-0.1282	-8	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-6 (bg)	0.5503	22	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-14	88.31	32	48	No	14	0	n/a	n/a	0.01	NP

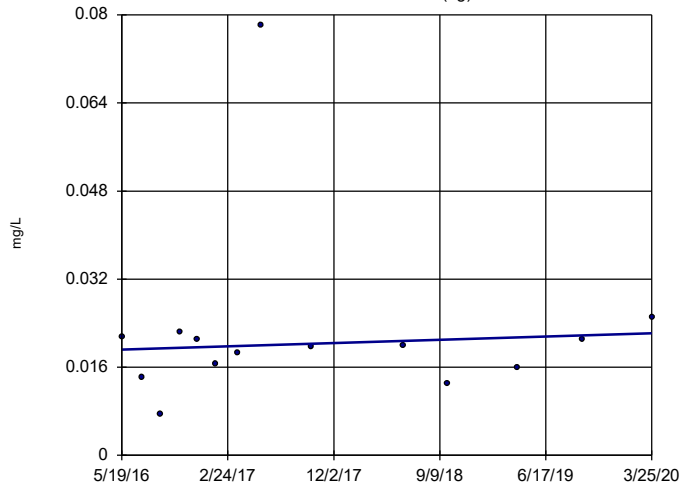
Trend Test Summary -All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

<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>
Sulfate (mg/L)	HGWC-15	32.25	24	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-16	1.071	21	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-17	49.32	42	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-18	26.39	30	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	19.47	27	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-3.376	-14	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	2.137	9	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-4 (bg)	-29.52	-34	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-5 (bg)	-5.489	-26	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-6 (bg)	2.317	20	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-14	-238.3	-48	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-15	-35.1	-16	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.9	63	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	96.37	70	48	Yes	14	7.143	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-18	0	0	48	No	14	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

HGWA-1 (bg)

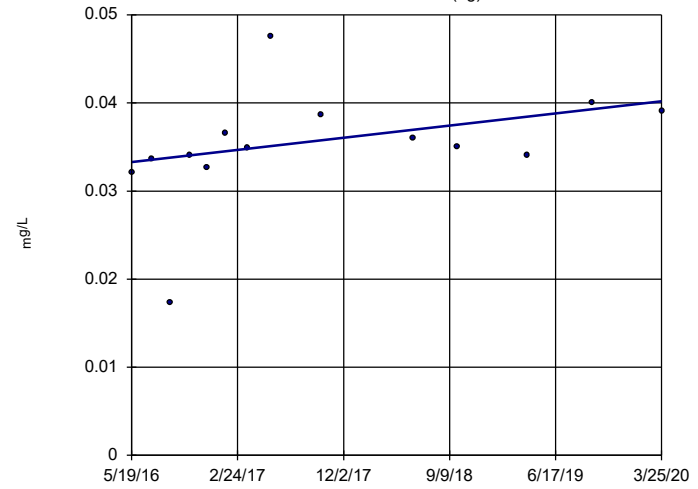


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 Slope = 0.0007668
 units per year.
 Mann-Kendall
 statistic = 9
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-2 (bg)

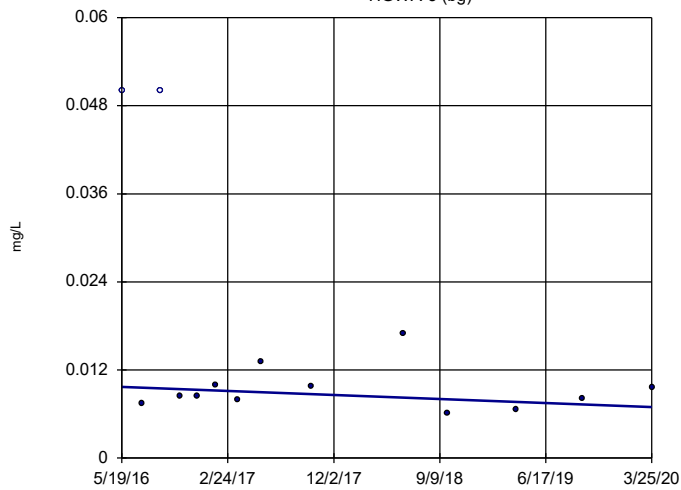


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 Slope = 0.001791
 units per year.
 Mann-Kendall
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 critical = 48
 Trend not sig-
 nificant at 99%
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 tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

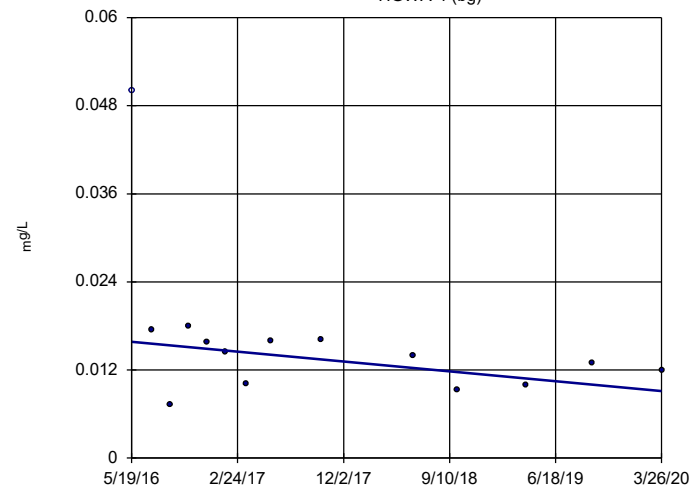


n = 14
 Slope = -0.0007135
 units per year.
 Mann-Kendall
 statistic = -19
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-4 (bg)

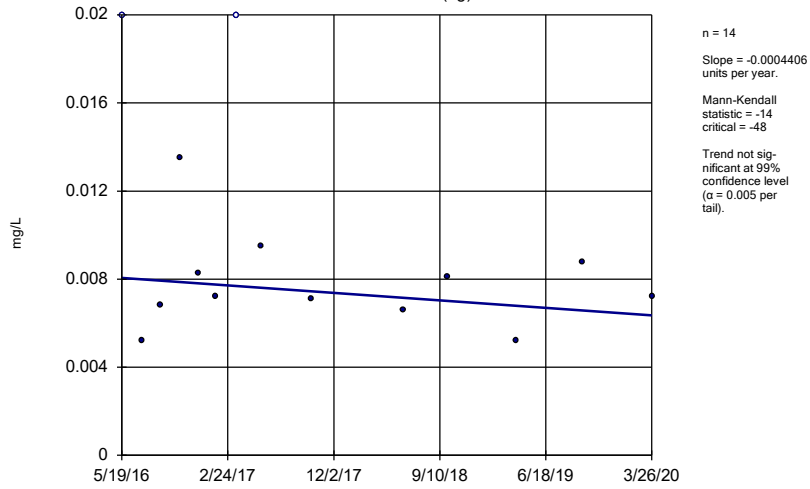


n = 14
 Slope = -0.001746
 units per year.
 Mann-Kendall
 statistic = -37
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
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Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

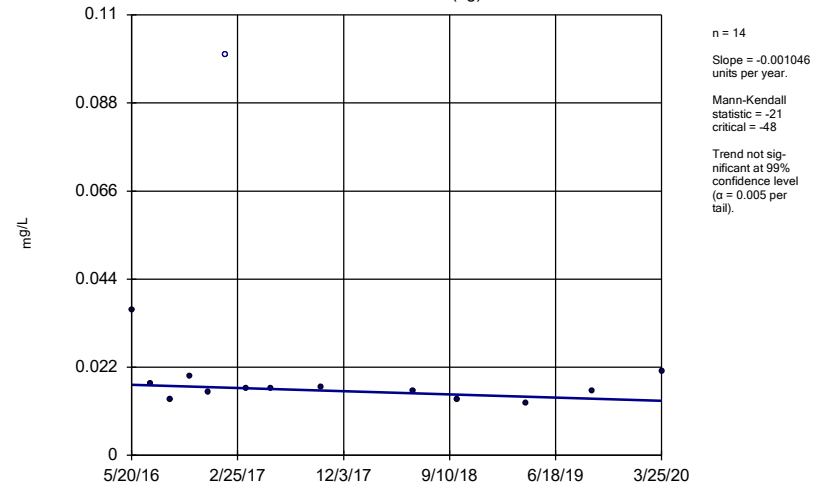
HGWA-5 (bg)



Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

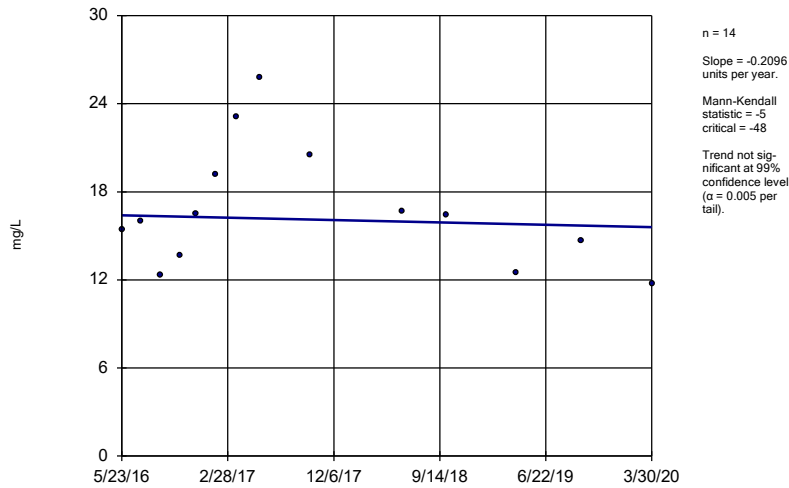
HGWA-6 (bg)



Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

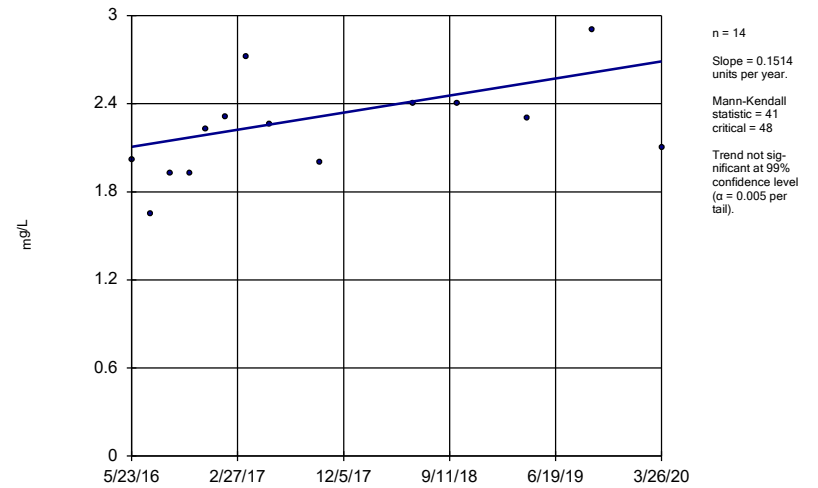
HGWC-14



Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

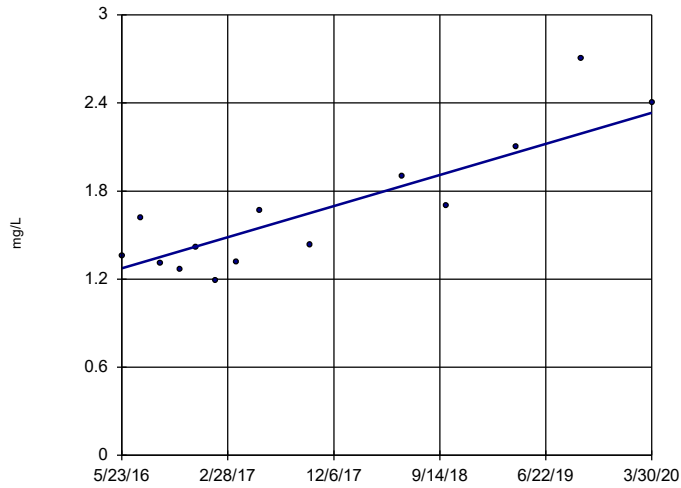
Sen's Slope Estimator

HGWC-15



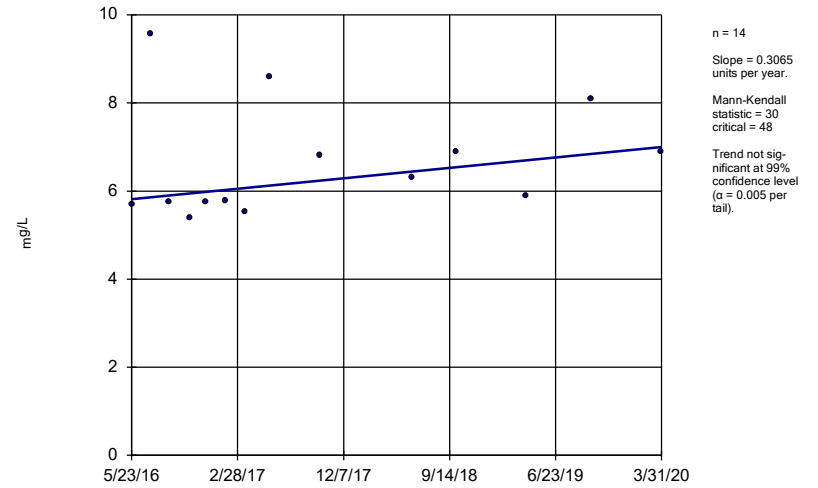
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-16



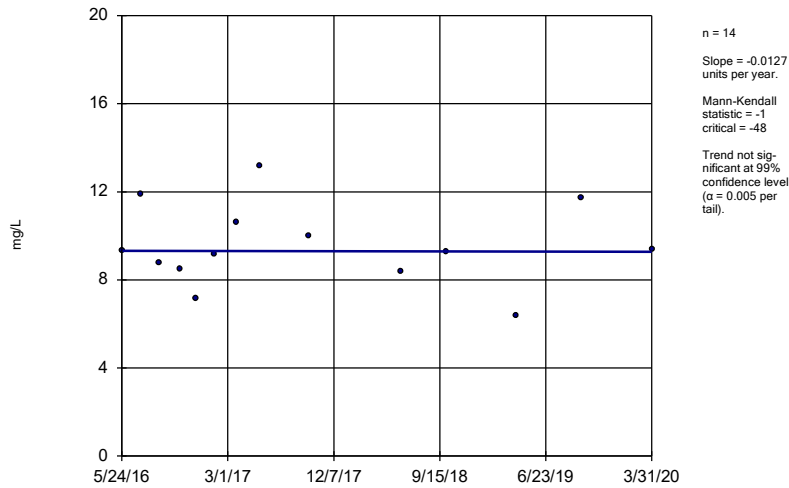
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-17



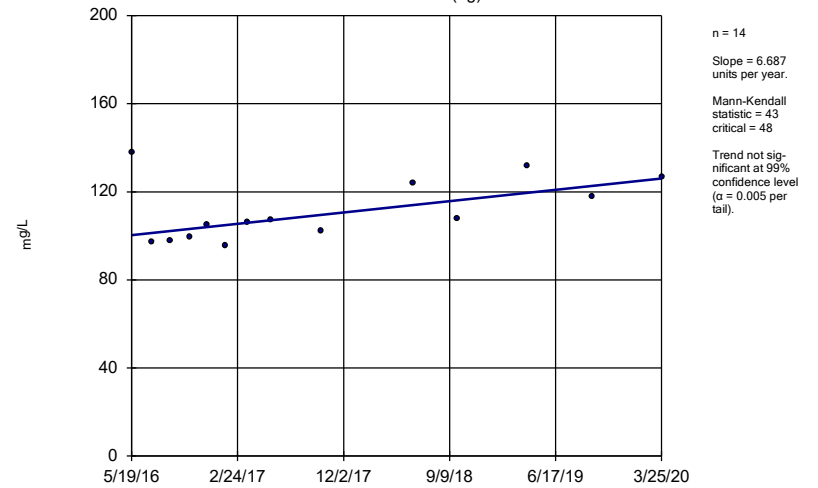
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-18



Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

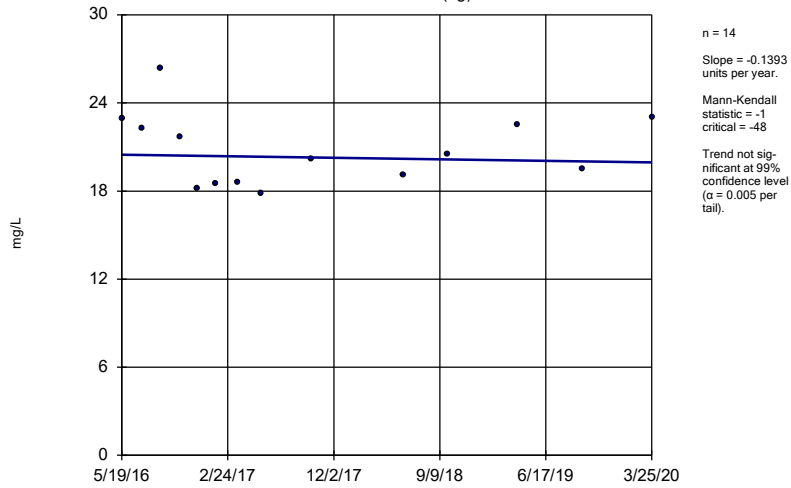
Sen's Slope Estimator HGWA-1 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

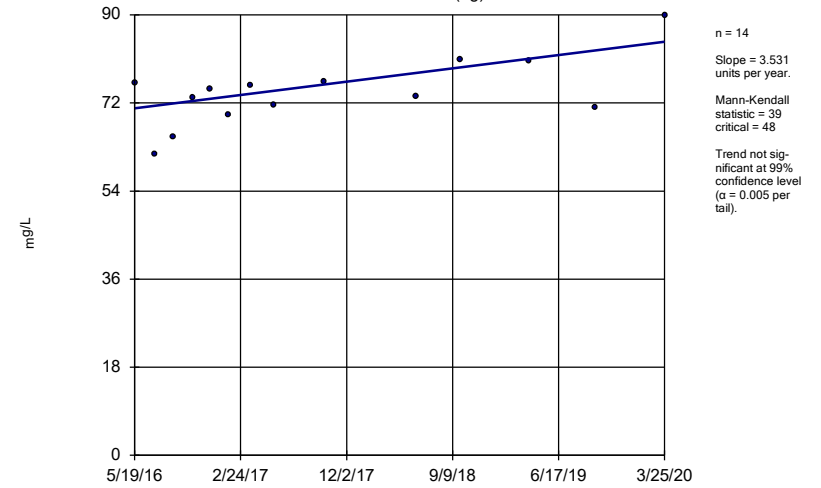
HGWA-2 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

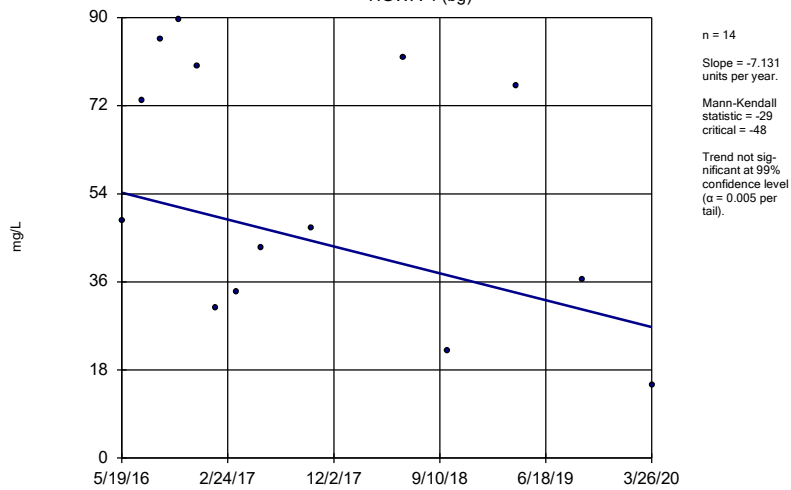
HGWA-3 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

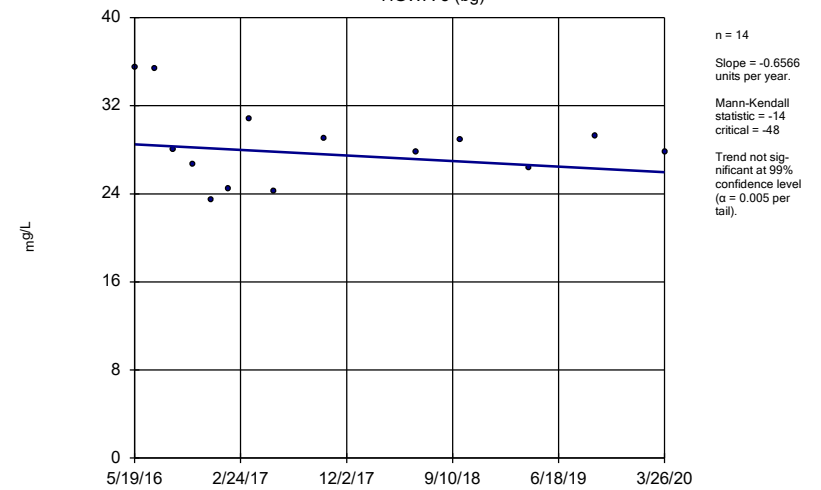
HGWA-4 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

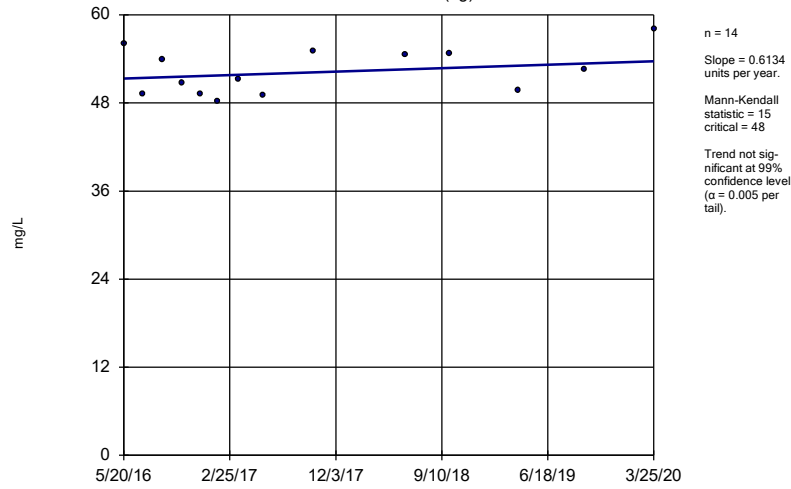
HGWA-5 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

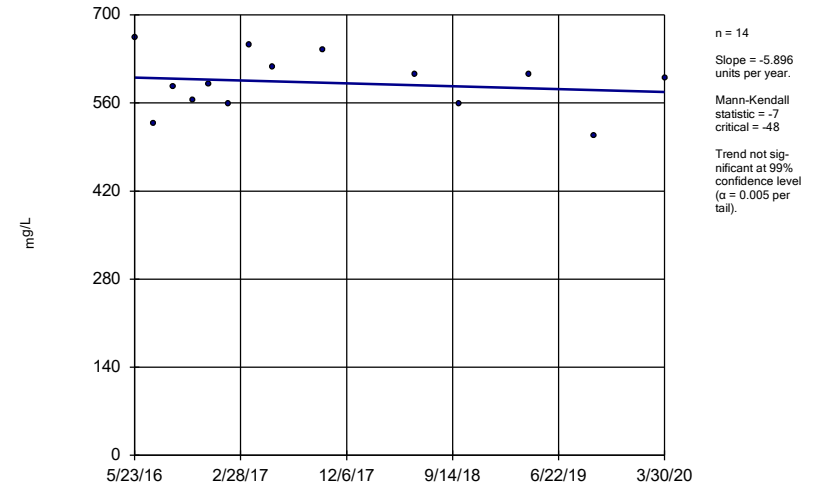
HGWA-6 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

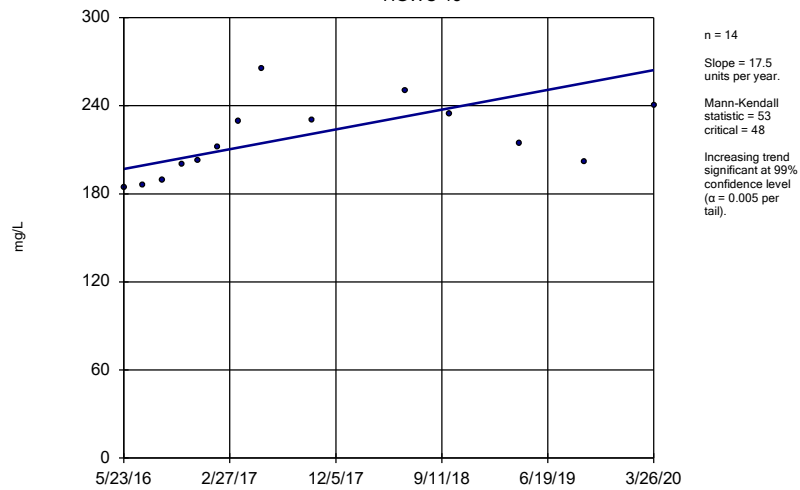
HGWC-14



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

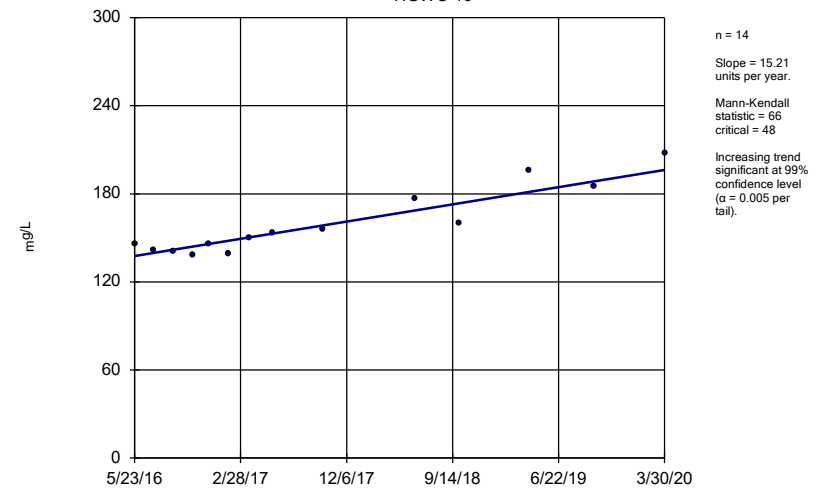
HGWC-15



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

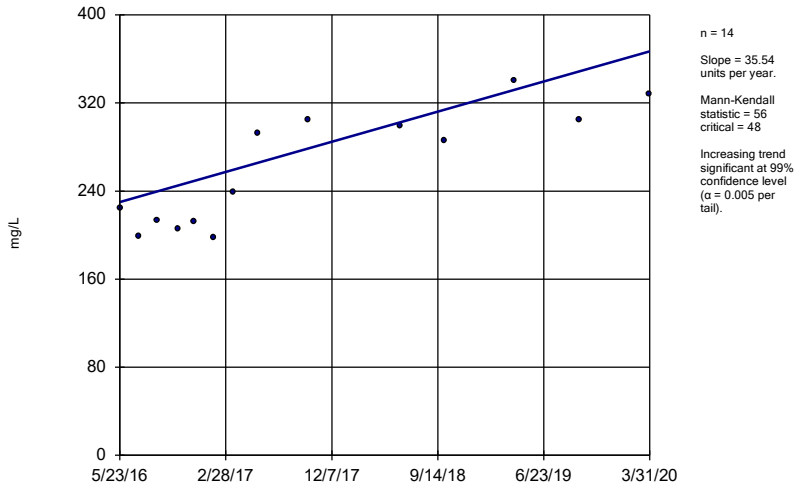
HGWC-16



Constituent: Calcium Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

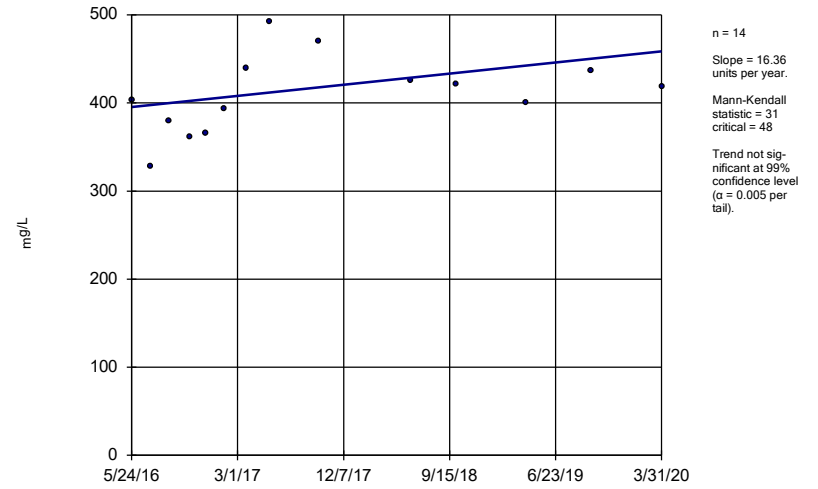
HGWC-17



Constituent: Calcium Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

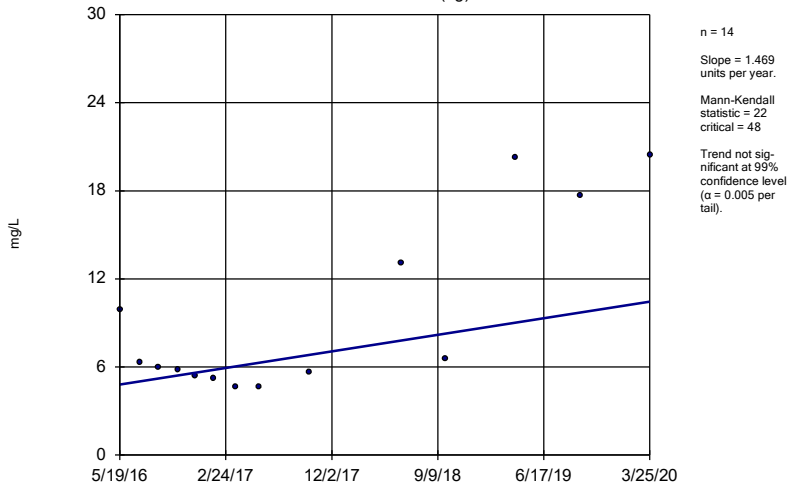
HGWC-18



Constituent: Calcium Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

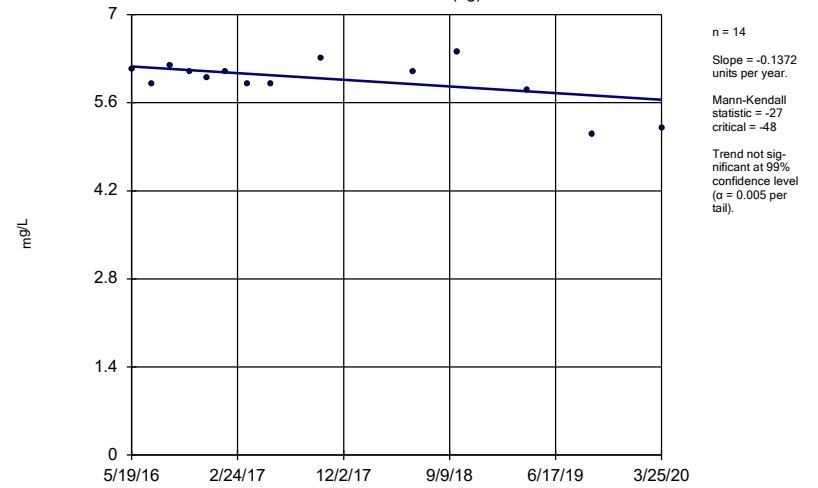
HGWA-1 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

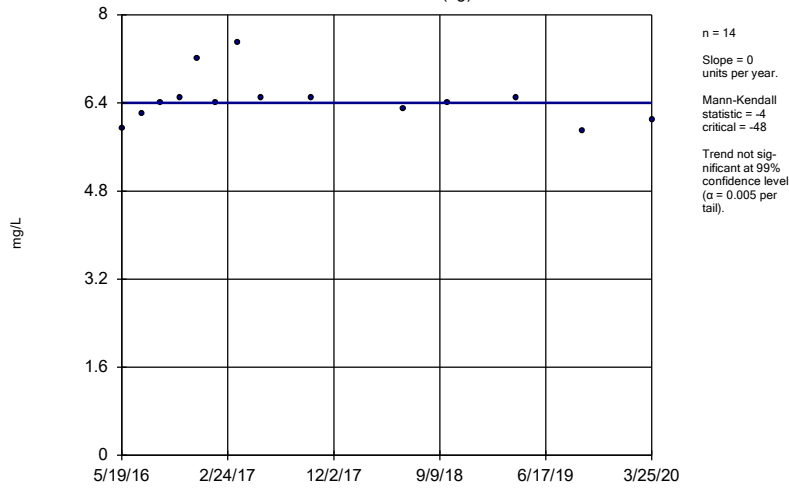
HGWA-2 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

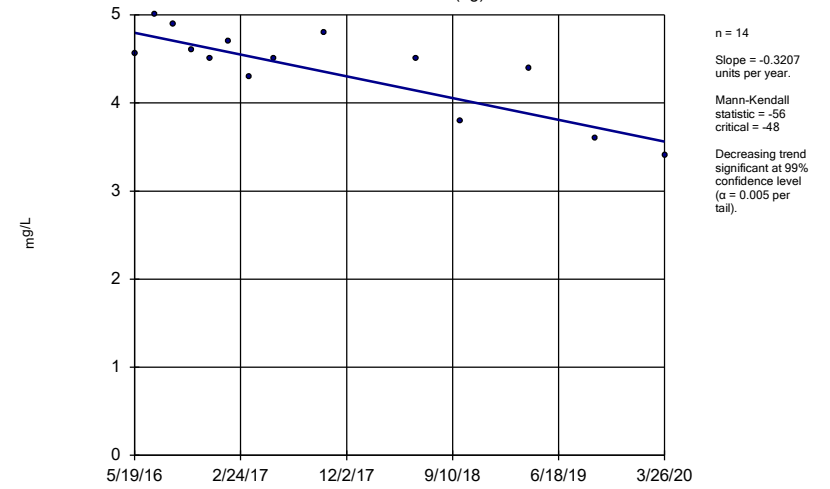
HGWA-3 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

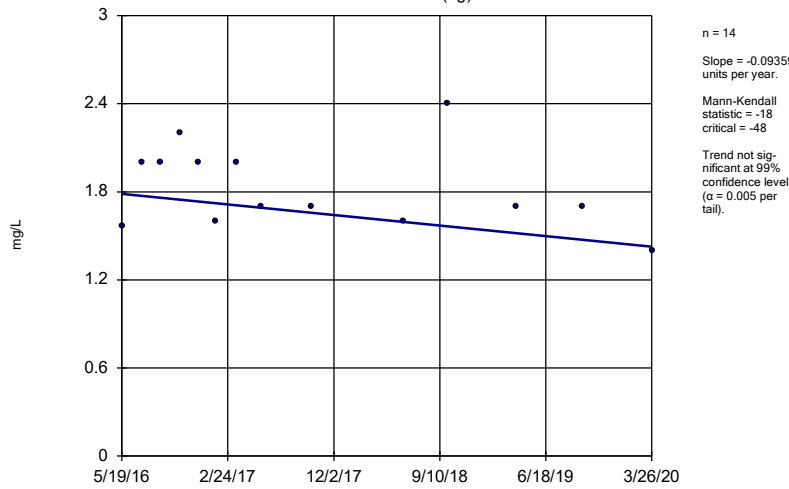
HGWA-4 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

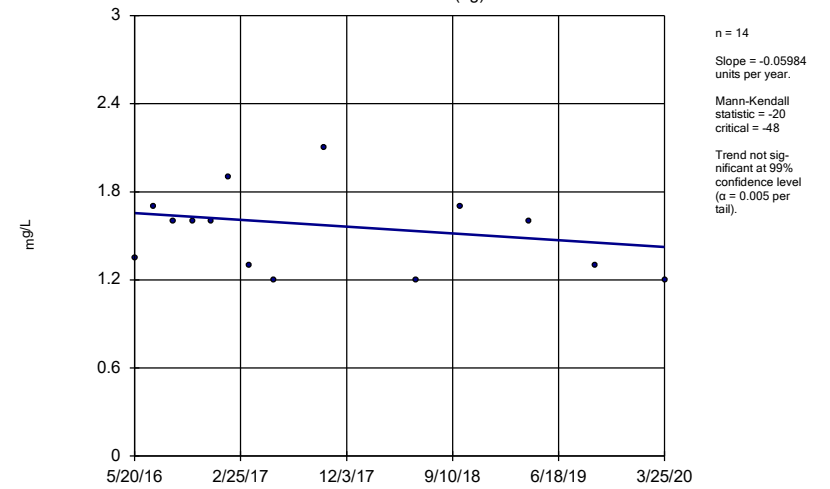
HGWA-5 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

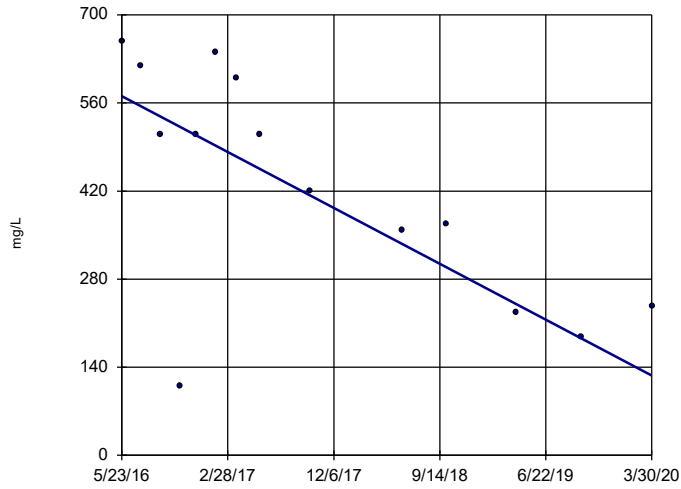
HGWA-6 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-14

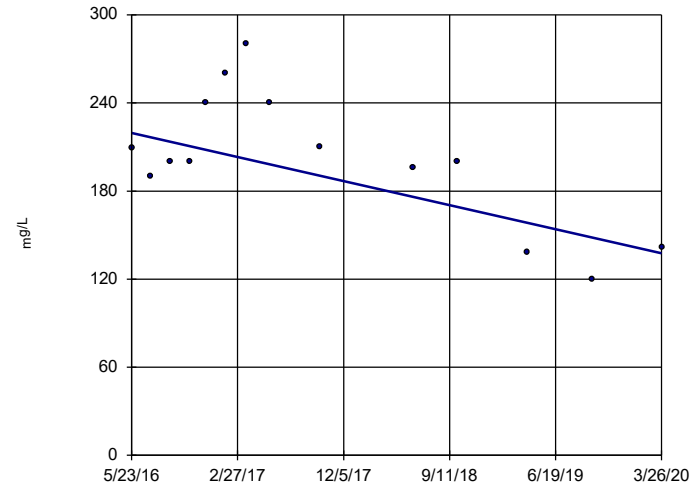


n = 14
 Slope = -115.1 units per year.
 Mann-Kendall statistic = -52
 critical = -48
 Decreasing trend significant at 99% confidence level ($\alpha = 0.005$ per tail).

Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-15

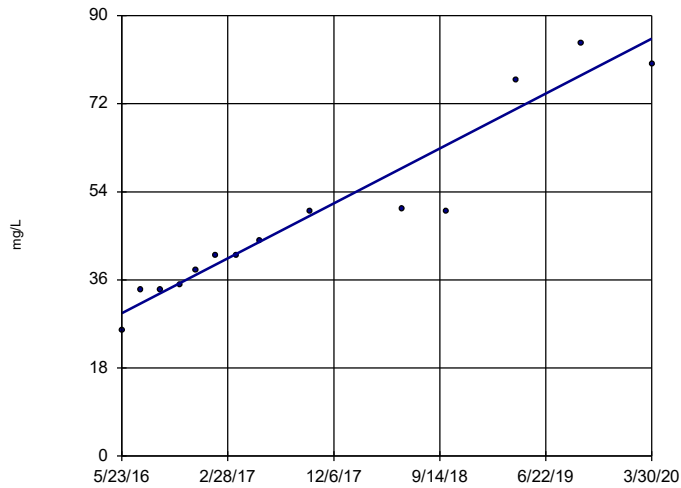


n = 14
 Slope = -21.33 units per year.
 Mann-Kendall statistic = -27
 critical = -48
 Trend not significant at 99% confidence level ($\alpha = 0.005$ per tail).

Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-16

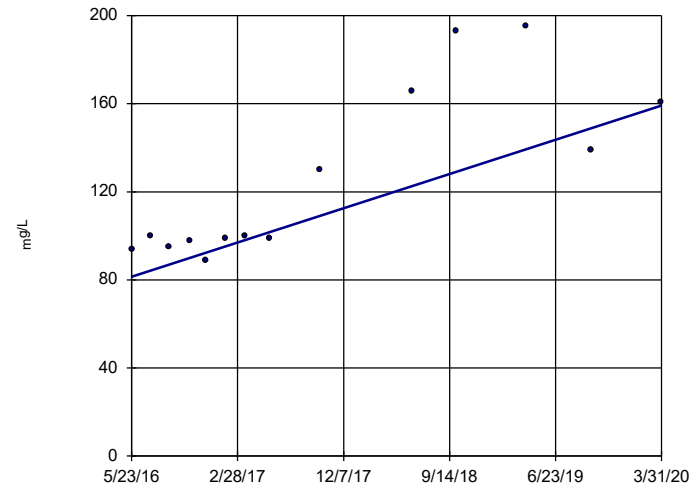


n = 14
 Slope = 14.55 units per year.
 Mann-Kendall statistic = 83
 critical = 48
 Increasing trend significant at 99% confidence level ($\alpha = 0.005$ per tail).

Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-17

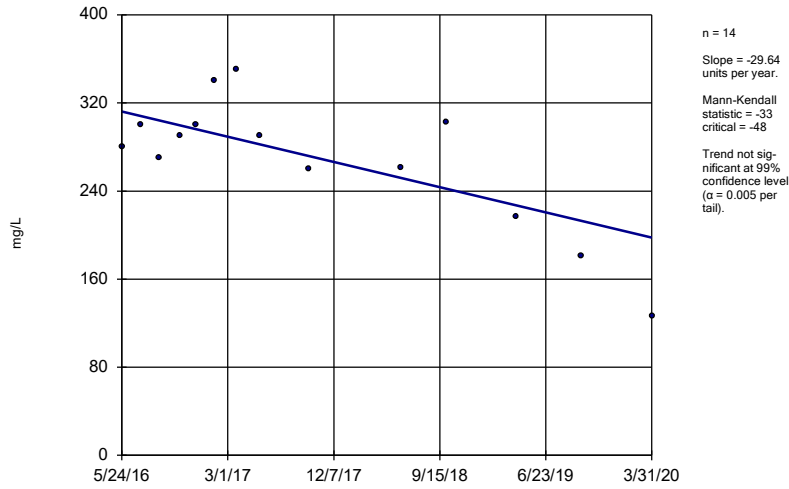


n = 14
 Slope = 20.15 units per year.
 Mann-Kendall statistic = 59
 critical = 48
 Increasing trend significant at 99% confidence level ($\alpha = 0.005$ per tail).

Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-18



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

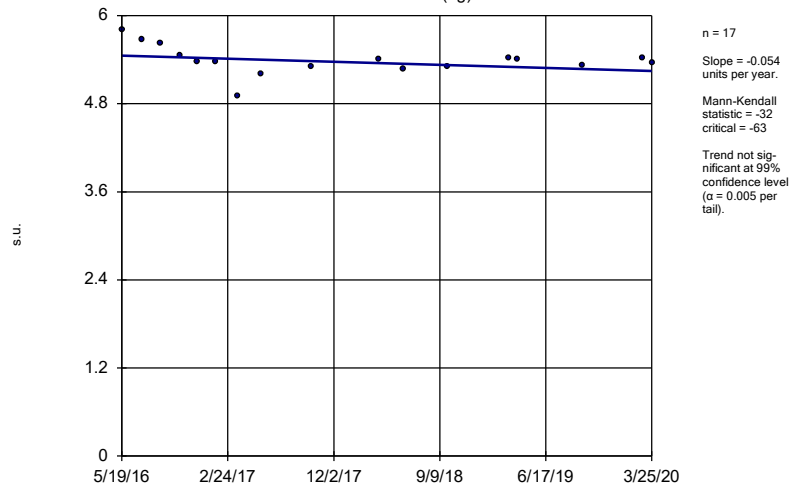
HGWA-1 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

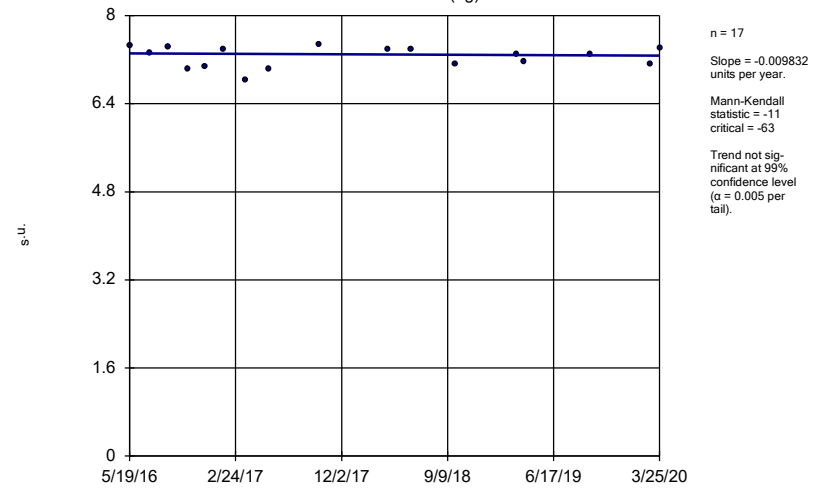
HGWA-2 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

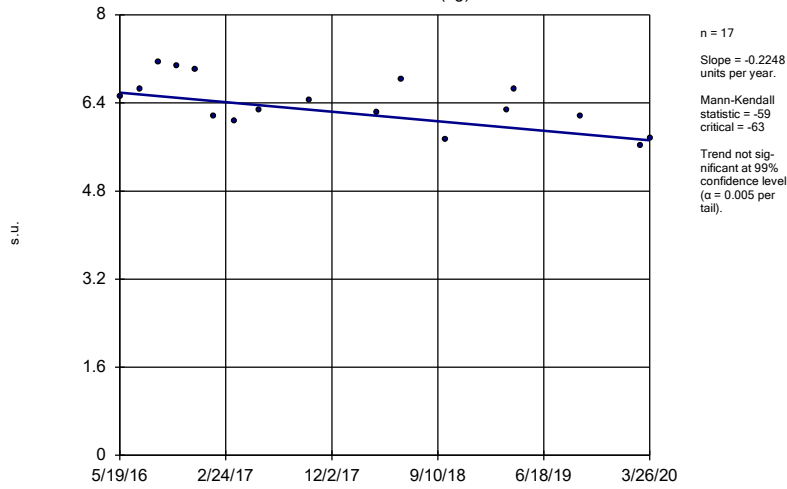
HGWA-3 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

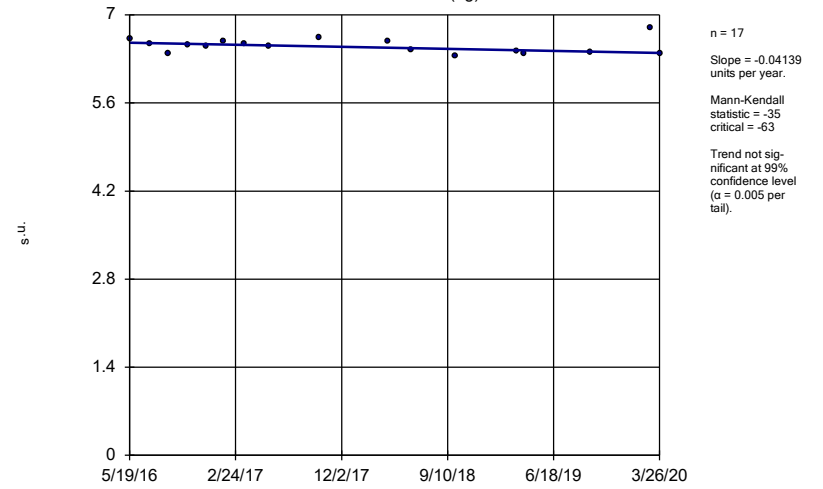
HGWA-4 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

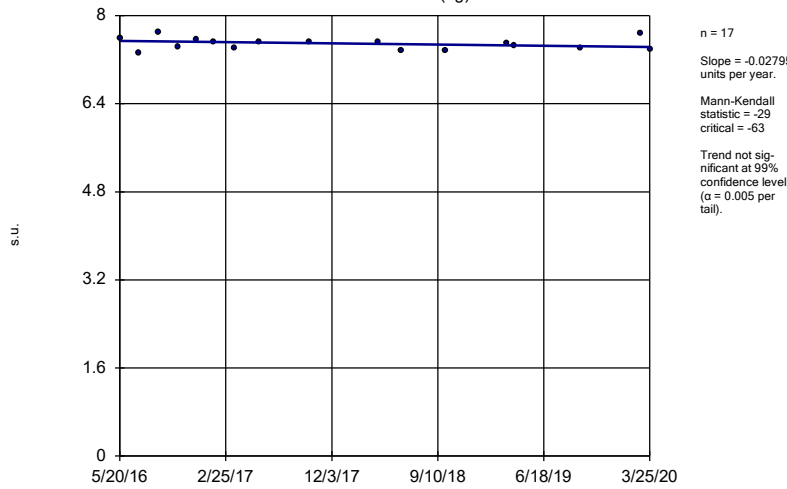
HGWA-5 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

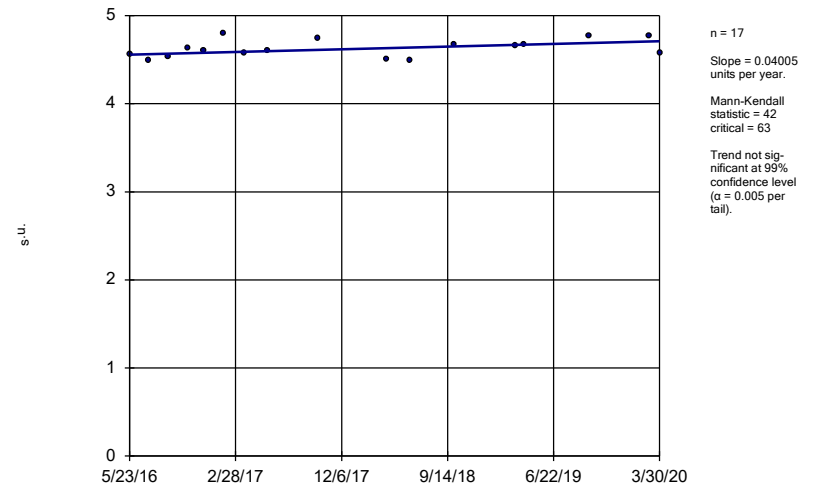
HGWA-6 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

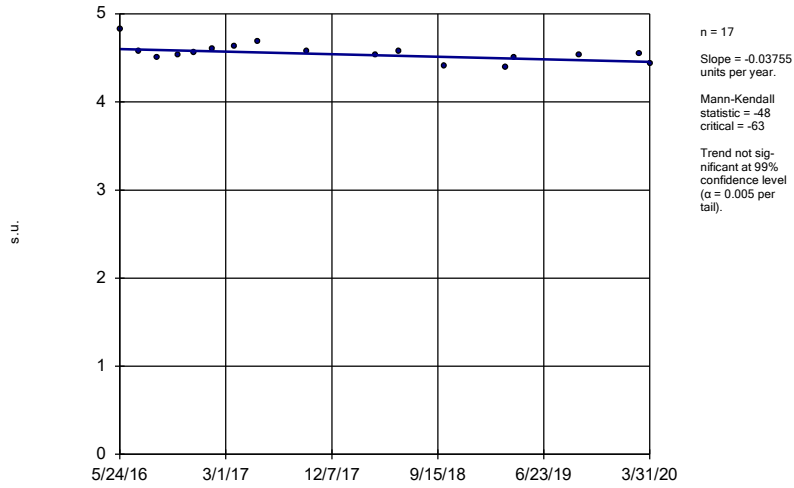
HGWC-14



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-18

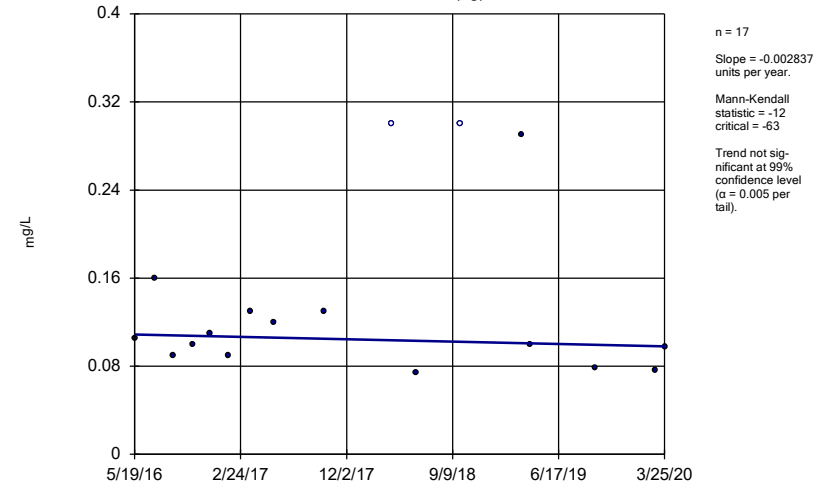


Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-1 (bg)

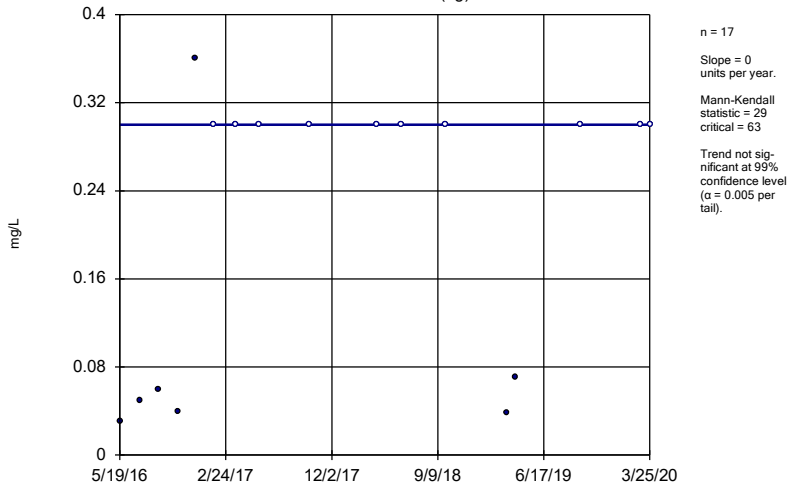


Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-2 (bg)

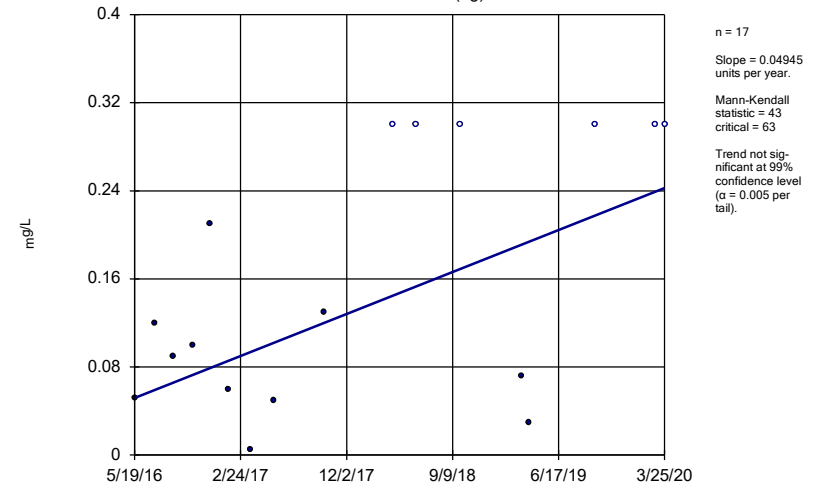


Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

Sen's Slope Estimator

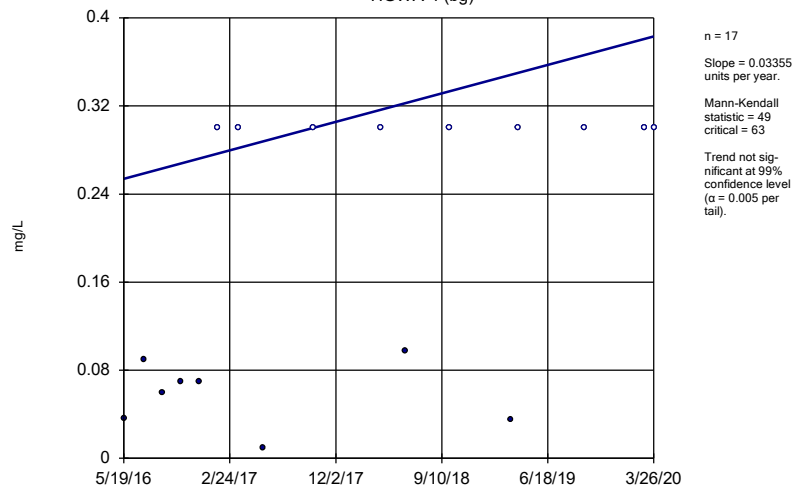
HGWA-3 (bg)



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

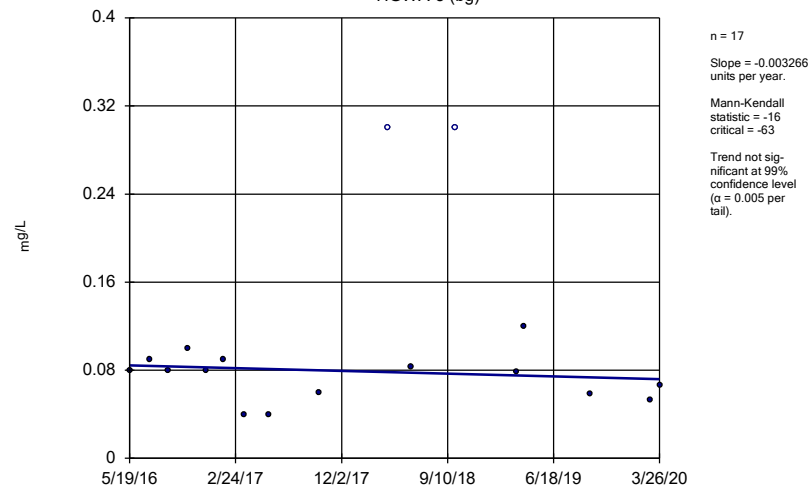
HGWA-4 (bg)



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

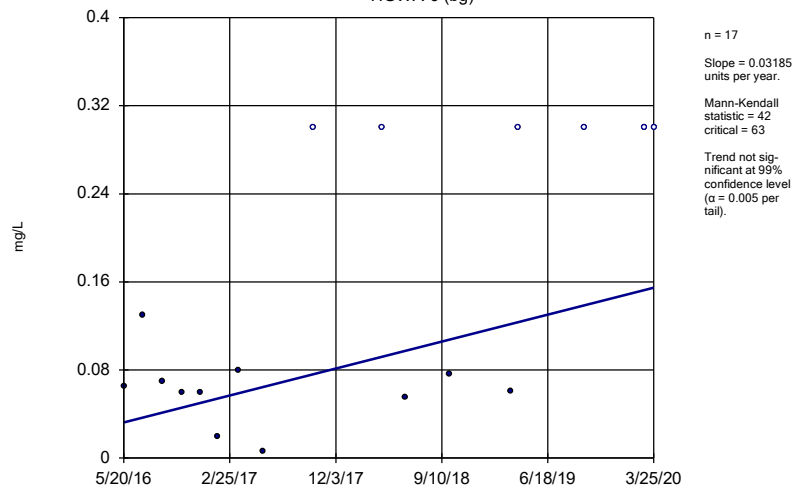
HGWA-5 (bg)



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

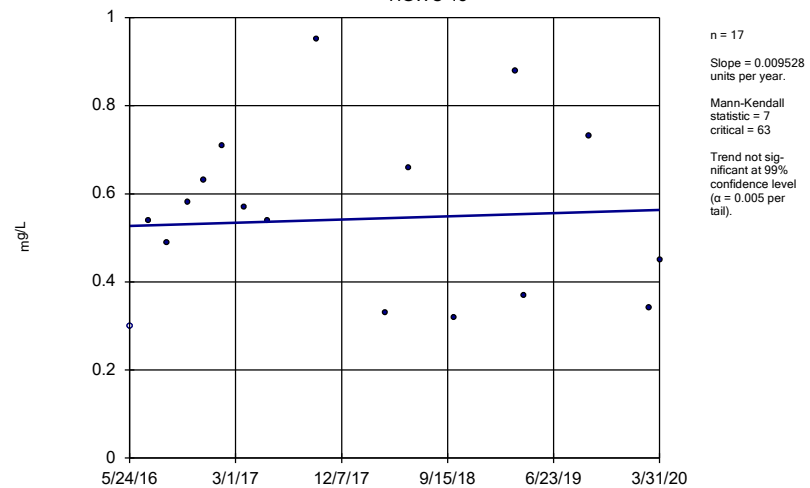
HGWA-6 (bg)



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

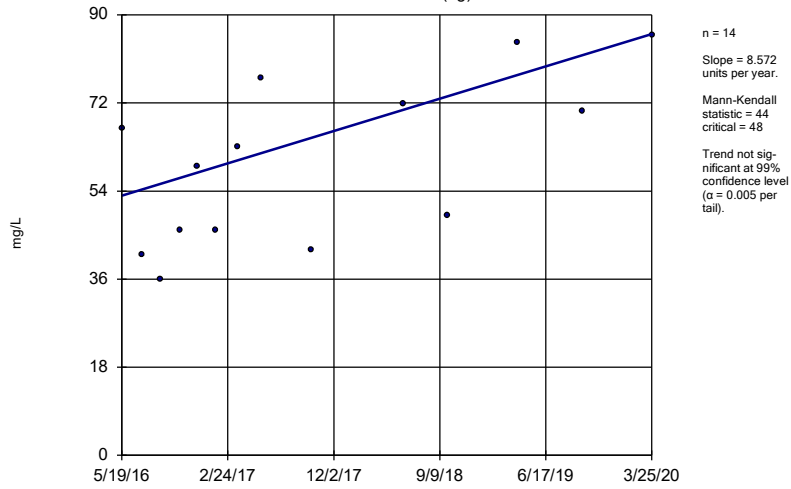
HGWC-18



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

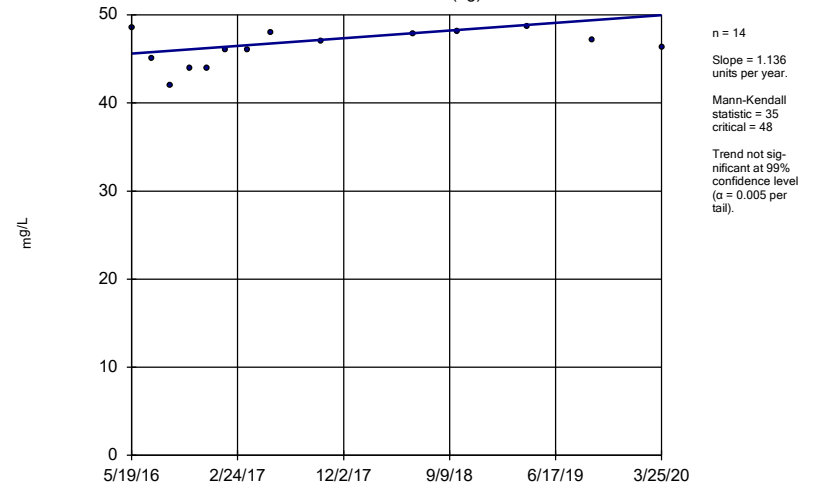
HGWA-1 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

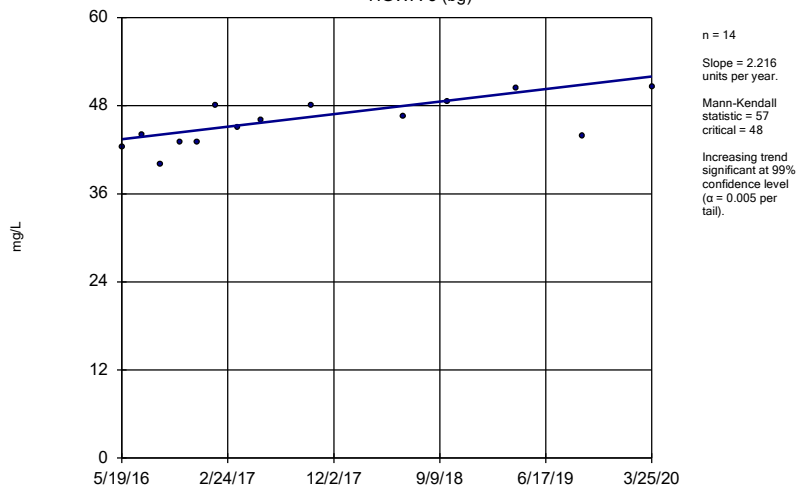
HGWA-2 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

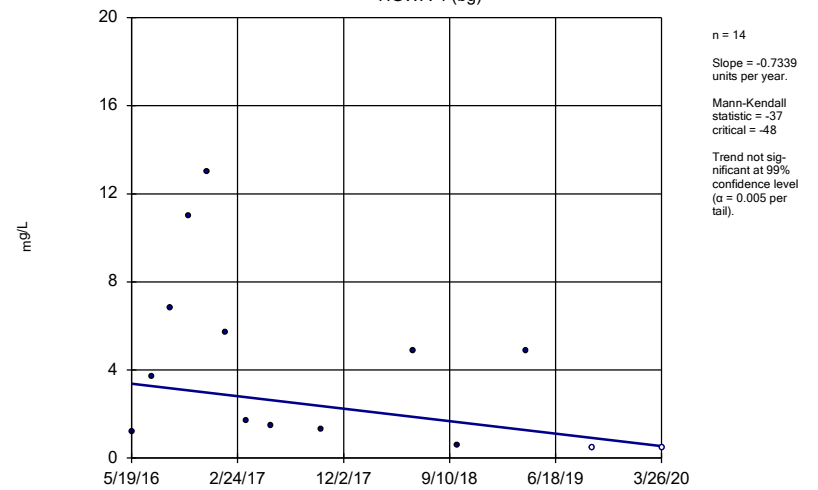


Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

Sen's Slope Estimator

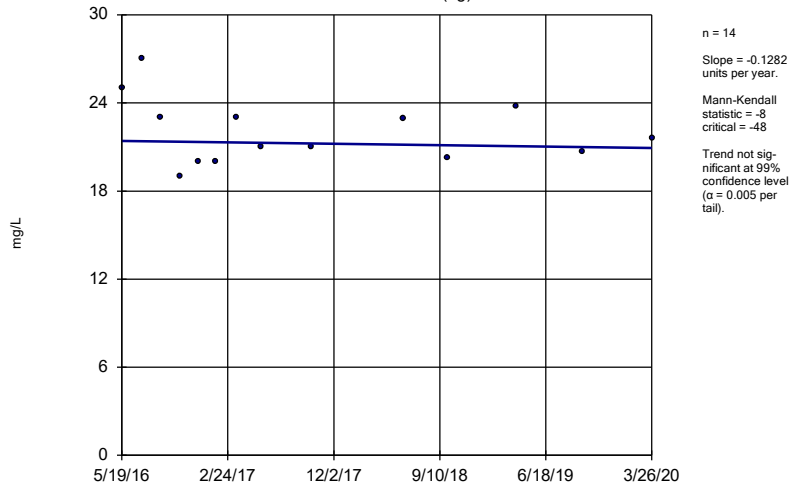
HGWA-4 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

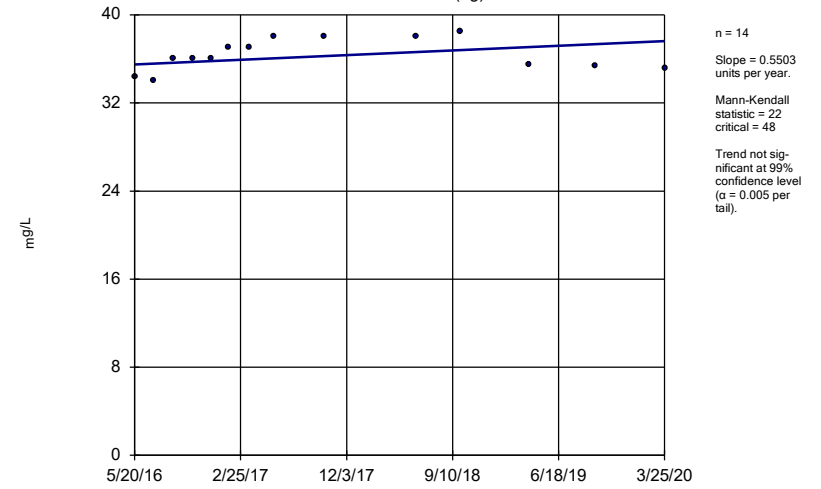
HGWA-5 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

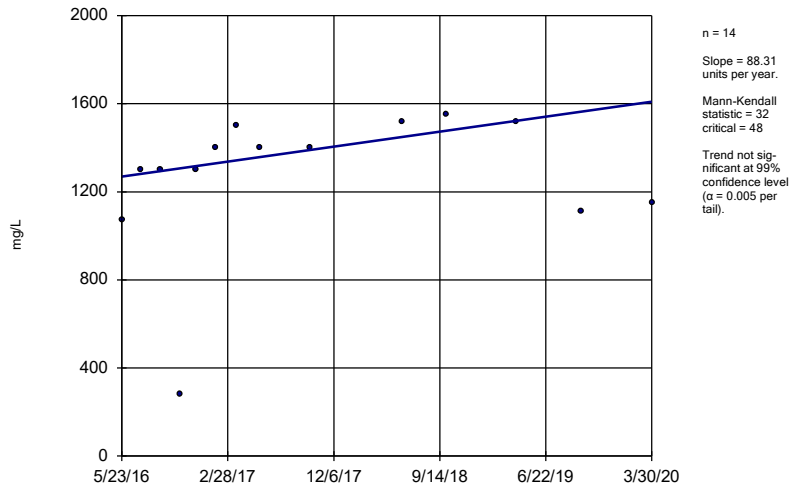
HGWA-6 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

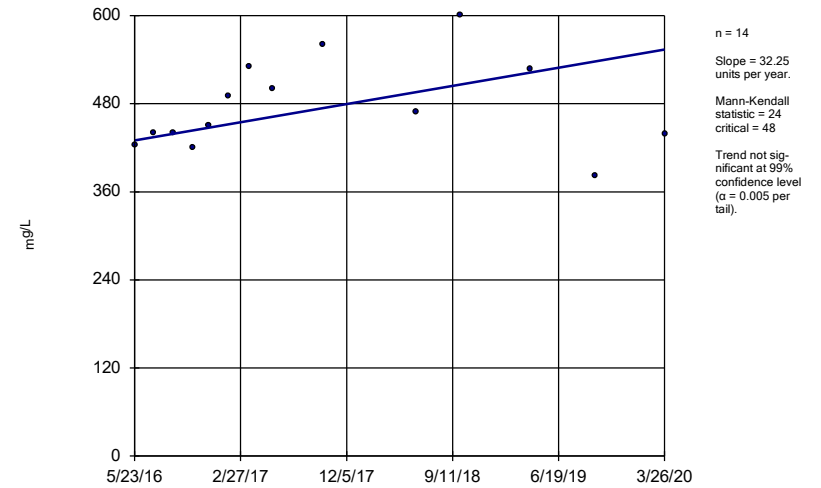
HGWC-14



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

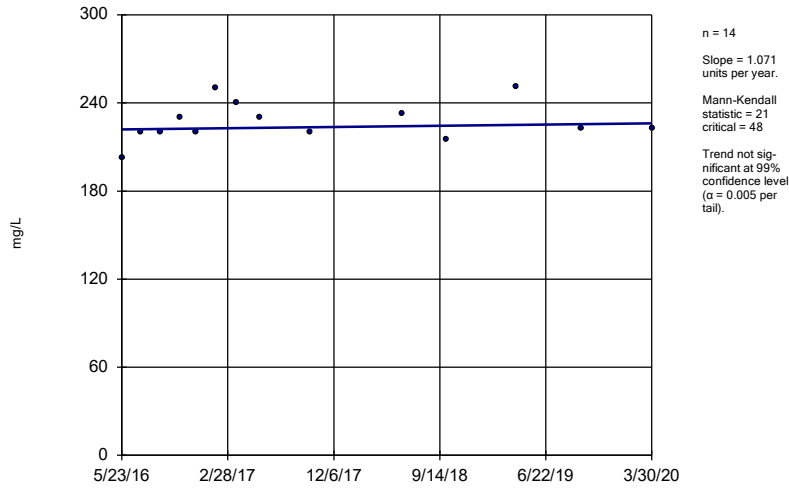
Sen's Slope Estimator

HGWC-15



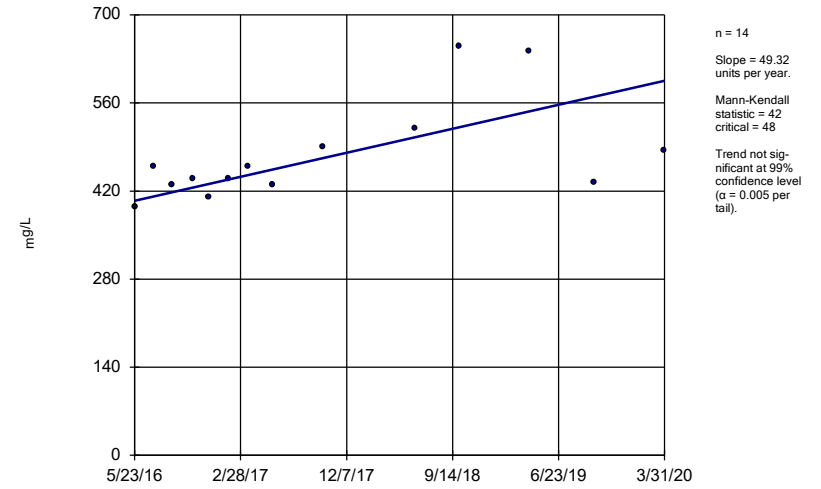
Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-16



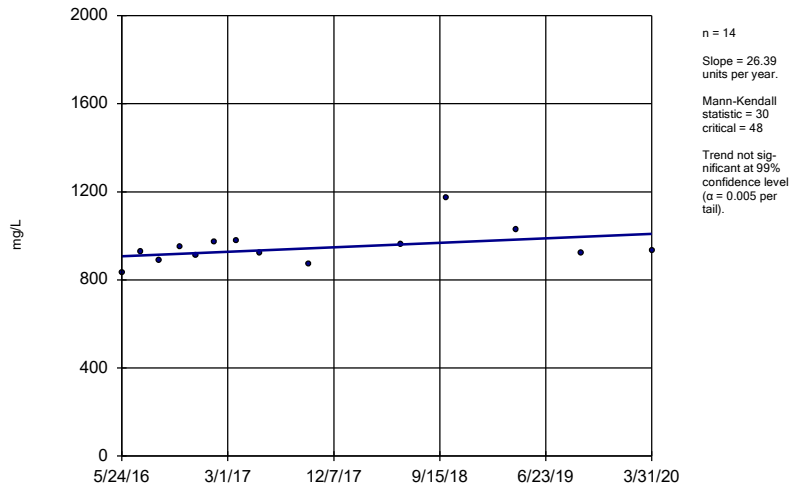
Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-17



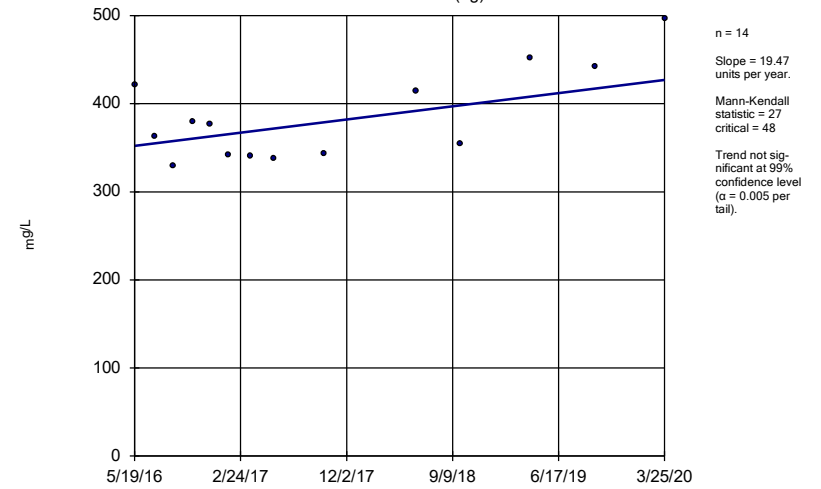
Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-18



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

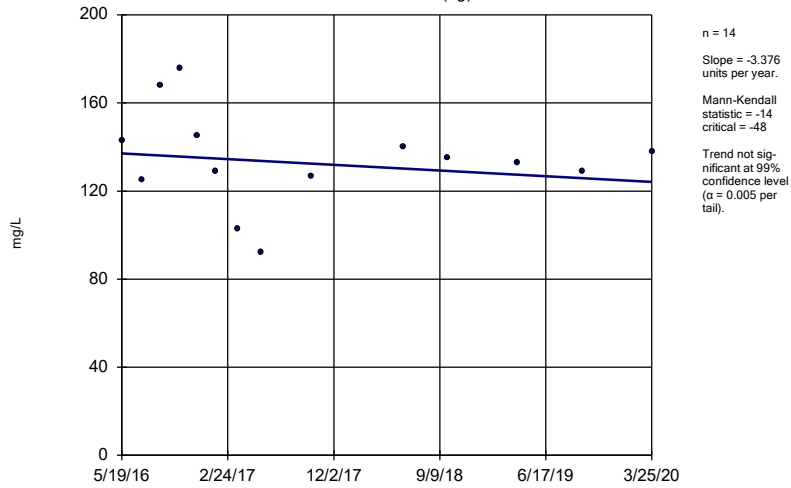
Sen's Slope Estimator HGWA-1 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

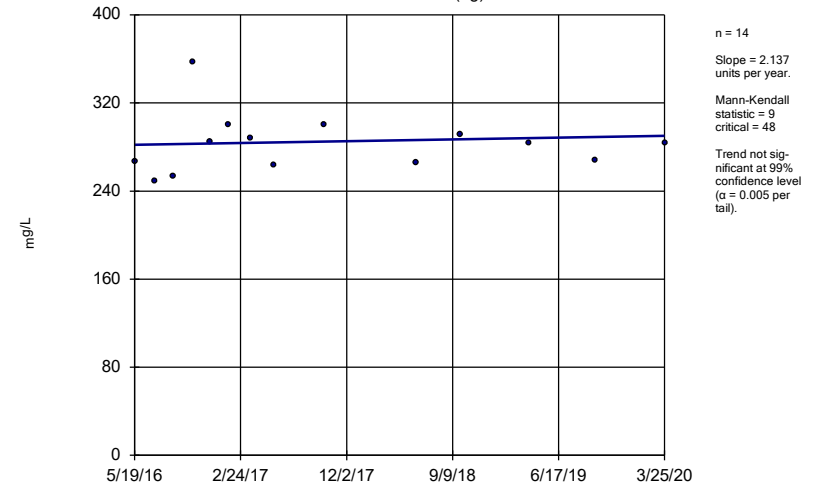
HGWA-2 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

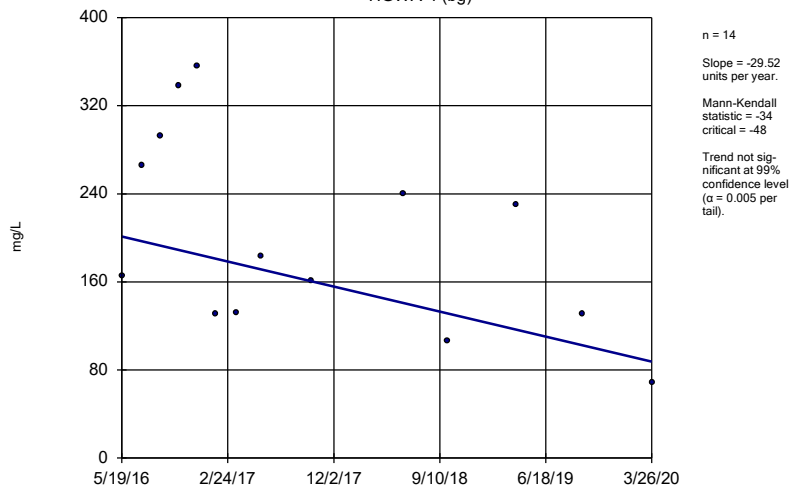
HGWA-3 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

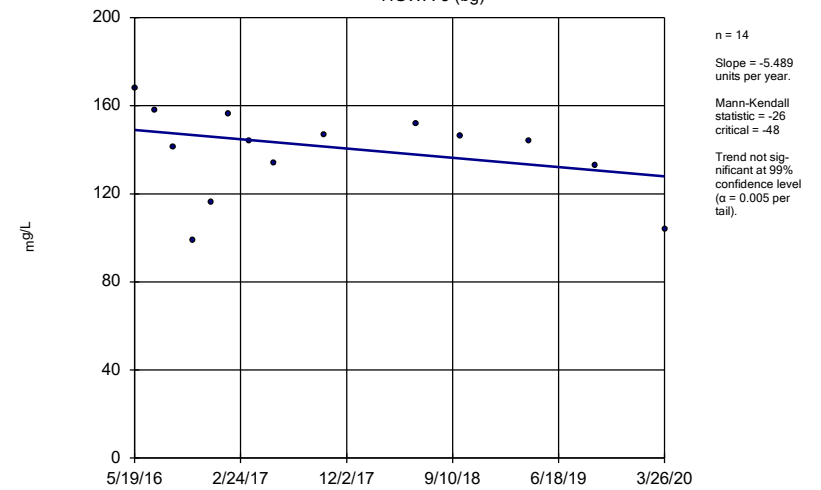
HGWA-4 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

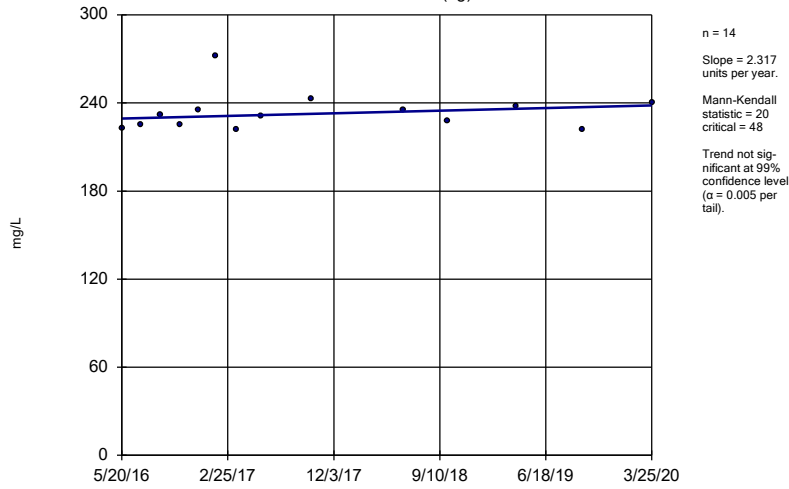
HGWA-5 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

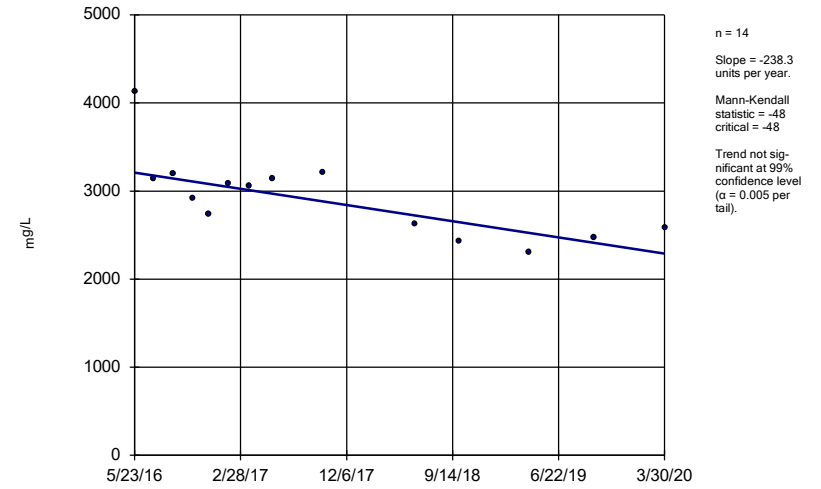
HGWA-6 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

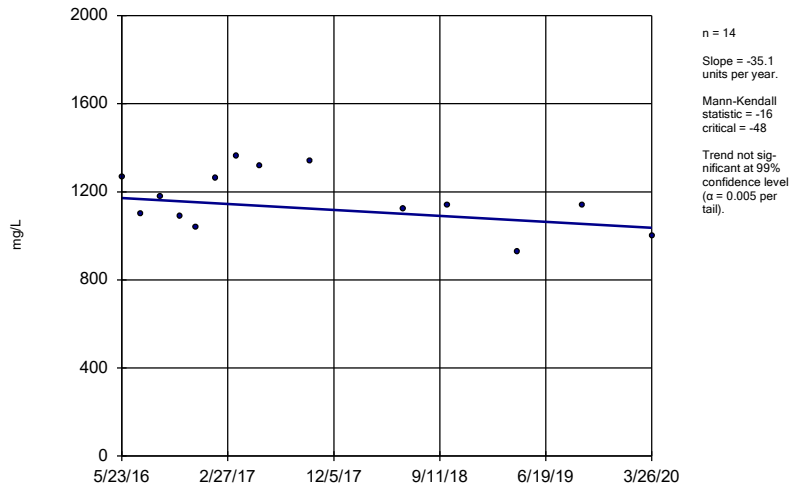
HGWC-14



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

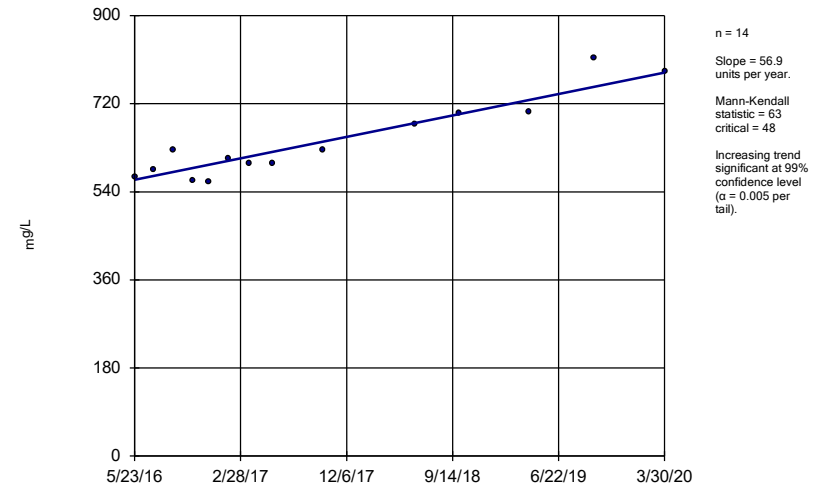
HGWC-15



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

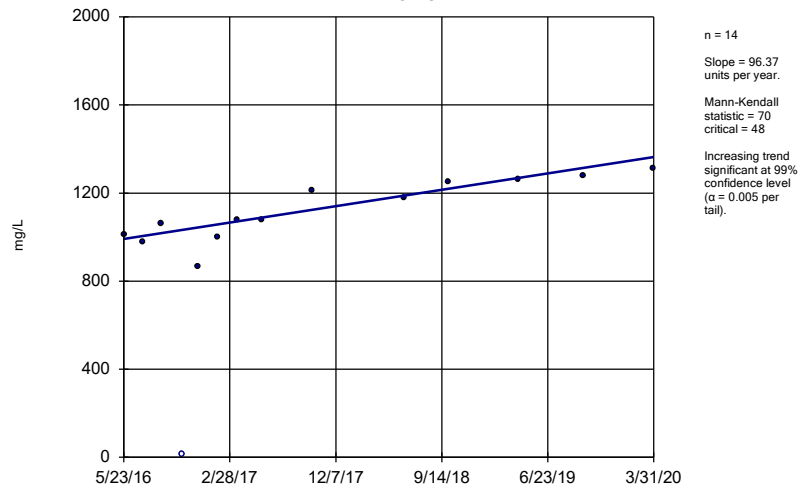
Sen's Slope Estimator

HGWC-16



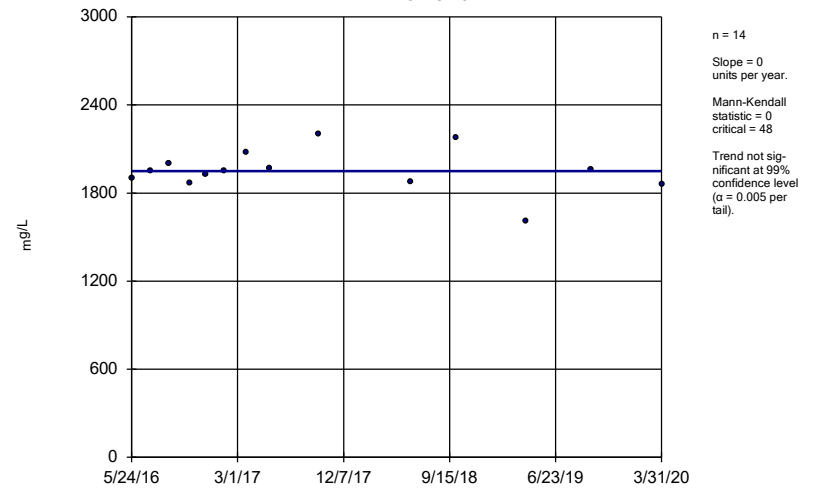
Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-17



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-18



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE F.

Tolerance Limit Summary Table - Appendix IV

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/7/2020, 12:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	69	n/a	n/a	94.2	n/a	n/a	0.02904	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	96	n/a	n/a	79.17	n/a	n/a	0.007269	NP Inter(NDs)
Barium (mg/L)	n/a	0.22	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	84	n/a	n/a	83.33	n/a	n/a	0.01345	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	96	n/a	n/a	92.71	n/a	n/a	0.007269	NP Inter(NDs)
Chromium (mg/L)	n/a	0.019	84	n/a	n/a	86.9	n/a	n/a	0.01345	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	96	n/a	n/a	67.71	n/a	n/a	0.007269	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	4.36	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Fluoride (mg/L)	n/a	0.36	102	n/a	n/a	34.31	n/a	n/a	0.005343	NP Inter(normality)
Lead (mg/L)	n/a	0.005	84	n/a	n/a	80.95	n/a	n/a	0.01345	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	96	n/a	n/a	27.08	n/a	n/a	0.007269	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	66	n/a	n/a	87.88	n/a	n/a	0.03387	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	84	n/a	n/a	97.62	n/a	n/a	0.01345	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	96	n/a	n/a	98.96	n/a	n/a	0.007269	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	96	n/a	n/a	97.92	n/a	n/a	0.007269	NP Inter(NDs)

FIGURE G.

PLANT HAMMOND AP-2 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

PLANT HAMMOND AP-2 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

*MCL = Maximum Contaminant Level

*CCR = Coal Combustion Residuals

*GWPS = Groundwater Protection Standard

FIGURE H.

State Confidence Interval Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.

State Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006053	0.003982	0.01	No 16	0.005017	0.001592	12.5	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 16	0.004146	0.001839	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 16	0.004169	0.001797	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.0008	0.01	No 16	0.003948	0.001883	75	None	No	0.01	NP (normality)
Arsenic (mg/L)	HGWC-18	0.006903	0.004414	0.01	No 16	0.005659	0.001913	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0238	0.019	2	No 16	0.02581	0.01989	6.25	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.03059	0.02137	2	No 16	0.02598	0.007082	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1128	0.09802	2	No 16	0.1054	0.01133	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0222	2	No 16	0.02484	0.002548	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0346	0.028	2	No 16	0.03476	0.01776	6.25	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 14	0.0008357	0.0009204	14.29	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.003386	0.002825	0.004	No 14	0.003106	0.0003963	7.143	None	No	0.01	Param.
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 16	0.001015	0.001189	37.5	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002433	0.001632	0.005	No 16	0.002057	0.0006788	0	None	sqrt(x)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 16	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 16	0.002348	0.0006075	93.75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002461	0.002064	0.005	No 16	0.002262	0.0003052	6.25	None	No	0.01	Param.
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 14	0.008649	0.003436	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 14	0.008636	0.003466	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 14	0.008086	0.003819	78.57	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 14	0.009414	0.002192	92.86	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.0005	0.1	No 14	0.008636	0.003468	85.71	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02799	0.02334	0.038	No 16	0.02485	0.005897	6.25	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05047	0.0331	0.038	No 16	0.04179	0.01335	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 16	0.004416	0.001597	87.5	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01647	0.01509	0.038	No 16	0.01578	0.001056	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.657	1.162	5	No 16	1.409	0.3803	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.9032	0.4358	5	No 16	0.6695	0.3592	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.052	0.52	5	No 16	0.7859	0.4088	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.107	0.691	5	No 16	0.899	0.3197	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.395	1.825	5	No 16	2.11	0.4386	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3427	0.1379	4	No 17	0.2403	0.1635	17.65	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.31	0.09	4	No 17	0.2271	0.137	35.29	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-16	0.42	0.23	4	No 17	0.261	0.1194	47.06	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-17	0.42	0.081	4	No 17	0.2777	0.2173	41.18	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-18	0.6738	0.4309	4	No 17	0.5524	0.1938	5.882	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0014	0.005	No 14	0.001851	0.0009337	7.143	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.005	No 14	0.003316	0.002355	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.005	No 14	0.002914	0.0025	57.14	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000089	0.005	No 14	0.003248	0.002439	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.005	No 14	0.001646	0.0009815	7.143	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.03	No 16	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0013	0.03	No 16	0.01305	0.01369	37.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0041	0.0028	0.03	No 16	0.004962	0.006706	6.25	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.03	No 16	0.01913	0.01449	62.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01494	0.01231	0.03	No 16	0.01363	0.002015	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.01	No 14	0.009336	0.002486	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)

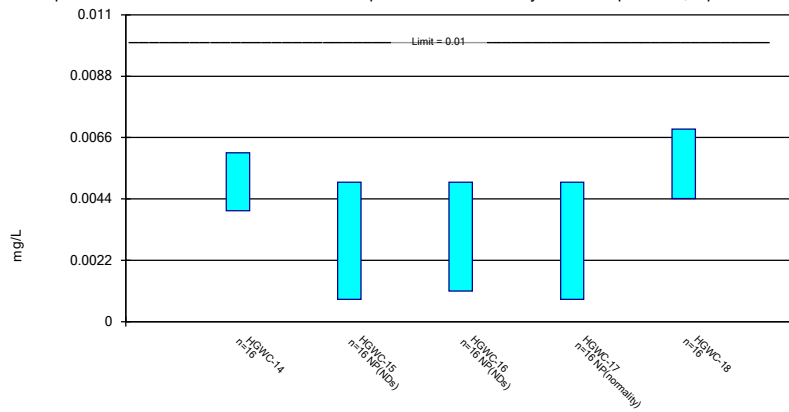
State Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium (mg/L)	HGWC-14	0.01423	0.006809	0.05	No	16	0.01052	0.005702	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0016	0.05	No	16	0.007944	0.003751	75	None	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No	16	0.009381	0.002478	93.75	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No	16	0.008362	0.003545	81.25	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03276	0.01722	0.05	No	16	0.02499	0.01194	6.25	None	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No	16	0.0002979	0.00002985	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No	16	0.0006125	0.0004539	56.25	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No	16	0.0005319	0.0004269	43.75	None	No	0.01	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

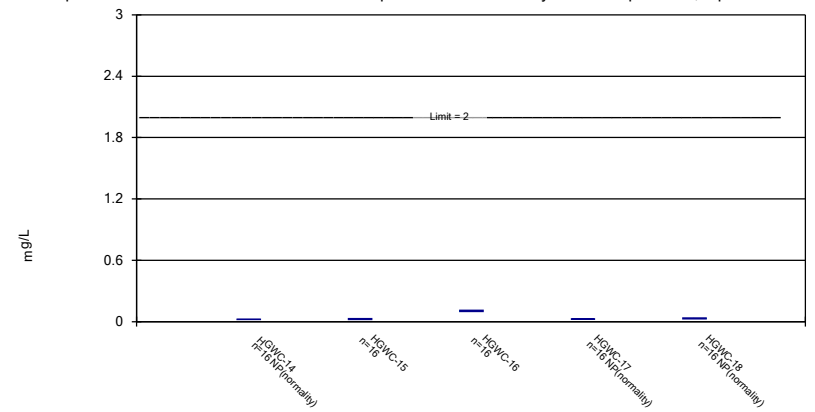
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

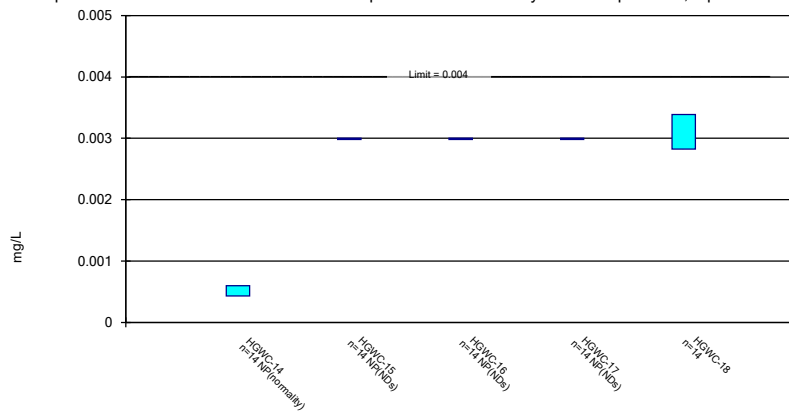
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

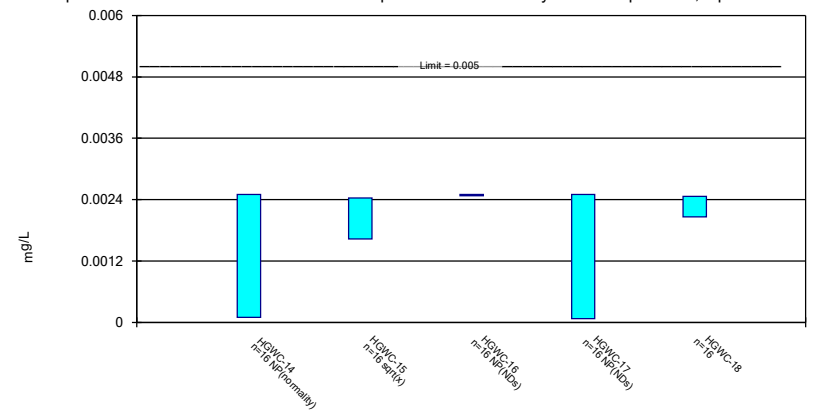
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

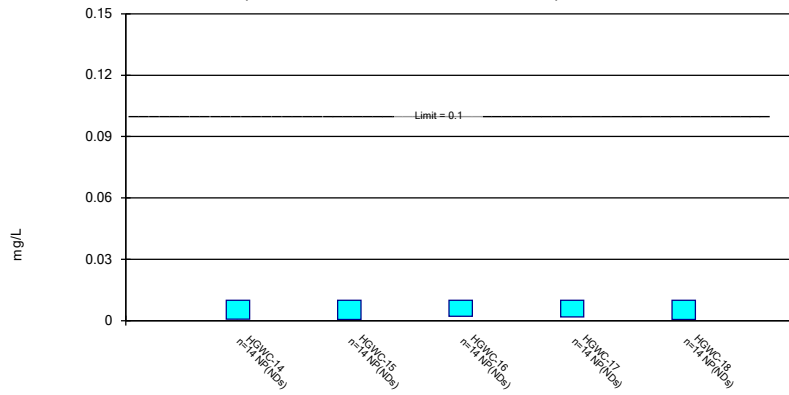
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

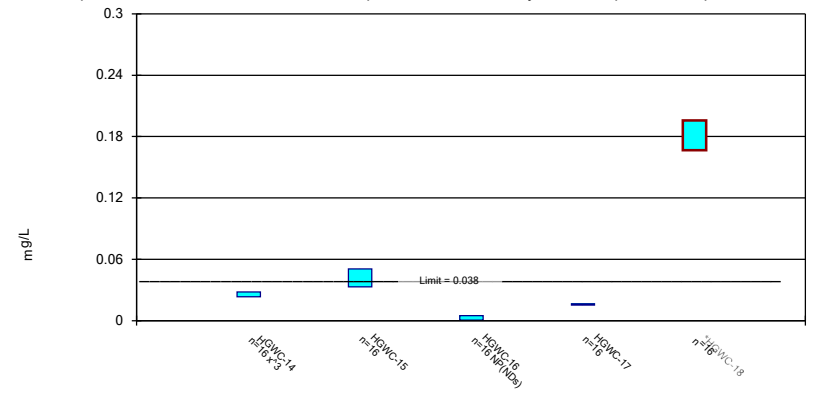
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

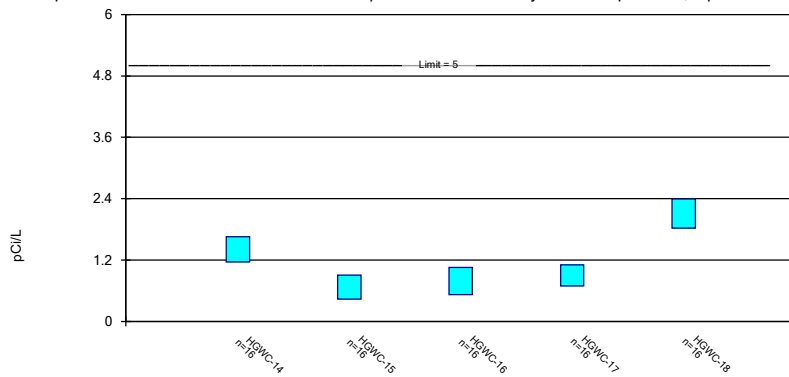
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric Confidence Interval

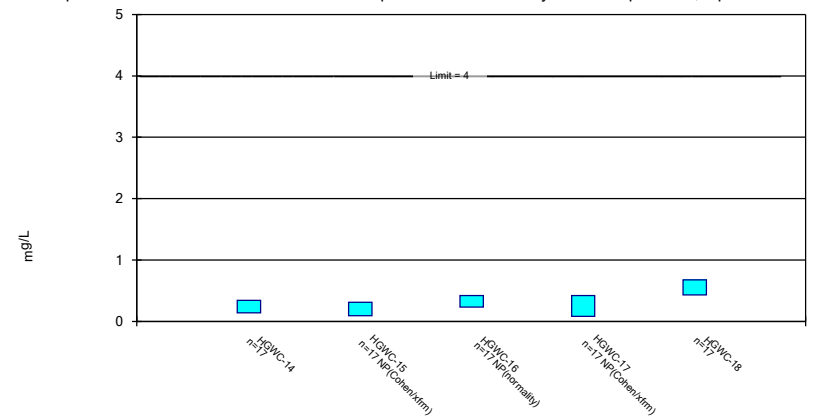
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

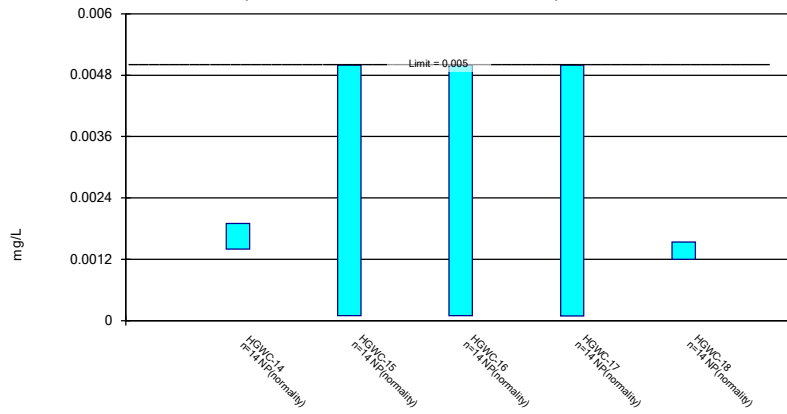
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

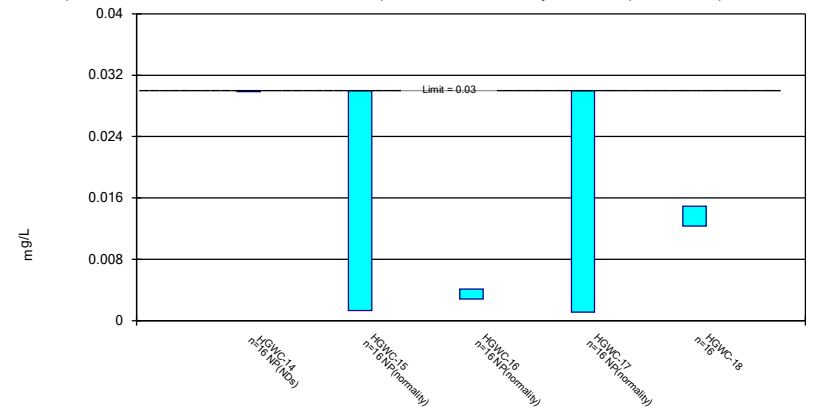
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

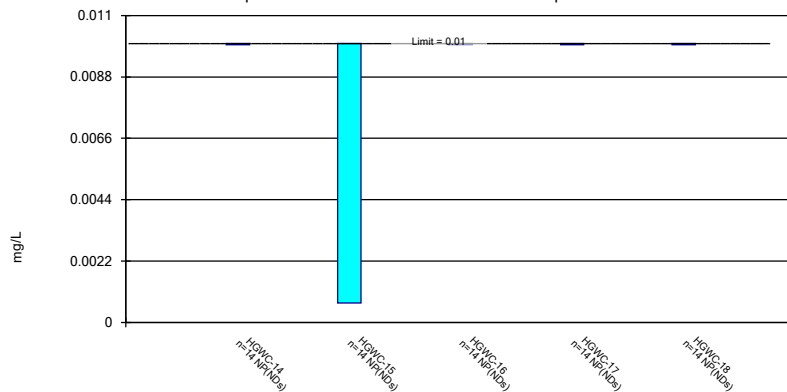
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

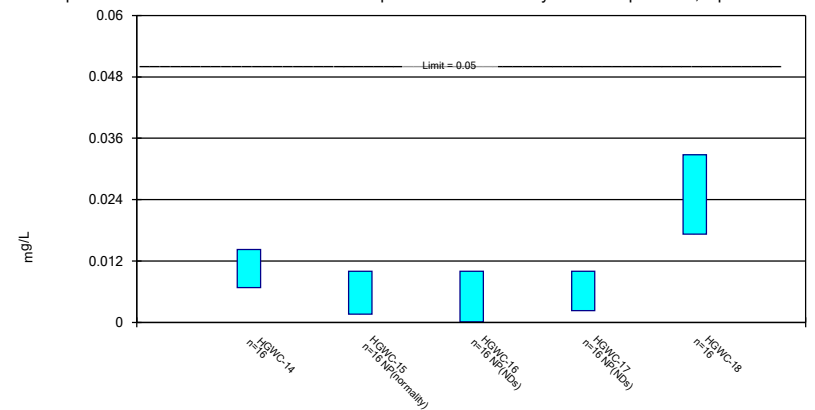
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Molybdenum Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

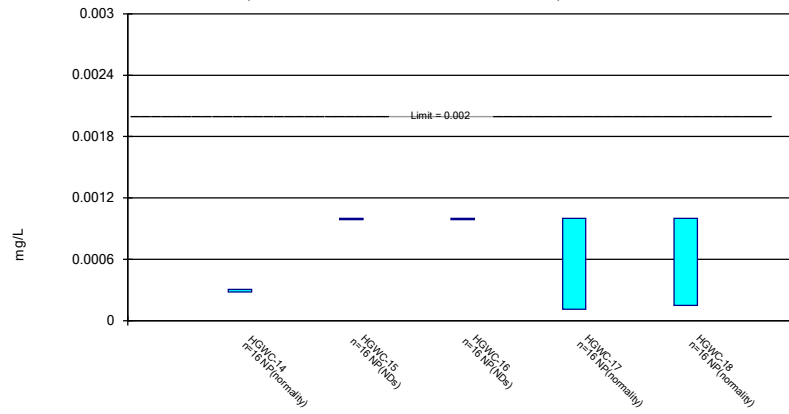
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE I.

Federal Confidence Interval Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.

Federal Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006053	0.003982	0.01	No 16	0.005017	0.001592	12.5	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 16	0.004146	0.001839	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 16	0.004169	0.001797	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.0008	0.01	No 16	0.003948	0.001883	75	None	No	0.01	NP (normality)
Arsenic (mg/L)	HGWC-18	0.006903	0.004414	0.01	No 16	0.005659	0.001913	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0238	0.019	2	No 16	0.02581	0.01989	6.25	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.03059	0.02137	2	No 16	0.02598	0.007082	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1128	0.09802	2	No 16	0.1054	0.01133	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0222	2	No 16	0.02484	0.002548	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0346	0.028	2	No 16	0.03476	0.01776	6.25	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 14	0.0008357	0.0009204	14.29	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.003386	0.002825	0.004	No 14	0.003106	0.0003963	7.143	None	No	0.01	Param.
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 16	0.001015	0.001189	37.5	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002433	0.001632	0.005	No 16	0.002057	0.0006788	0	None	sqrt(x)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 16	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 16	0.002348	0.0006075	93.75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002461	0.002064	0.005	No 16	0.002262	0.0003052	6.25	None	No	0.01	Param.
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 14	0.008649	0.003436	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 14	0.008636	0.003466	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 14	0.008086	0.003819	78.57	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 14	0.009414	0.002192	92.86	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.0005	0.1	No 14	0.008636	0.003468	85.71	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02799	0.02334	0.038	No 16	0.02485	0.005897	6.25	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05047	0.0331	0.038	No 16	0.04179	0.01335	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 16	0.004416	0.001597	87.5	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01647	0.01509	0.038	No 16	0.01578	0.001056	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.657	1.162	5	No 16	1.409	0.3803	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.9032	0.4358	5	No 16	0.6695	0.3592	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.052	0.52	5	No 16	0.7859	0.4088	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.107	0.691	5	No 16	0.899	0.3197	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.395	1.825	5	No 16	2.11	0.4386	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3427	0.1379	4	No 17	0.2403	0.1635	17.65	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.31	0.09	4	No 17	0.2271	0.137	35.29	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-16	0.42	0.23	4	No 17	0.261	0.1194	47.06	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-17	0.42	0.081	4	No 17	0.2777	0.2173	41.18	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-18	0.6738	0.4309	4	No 17	0.5524	0.1938	5.882	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0014	0.015	No 14	0.001851	0.0009337	7.143	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.015	No 14	0.003316	0.002355	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.015	No 14	0.002914	0.0025	57.14	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000089	0.015	No 14	0.003248	0.002439	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.015	No 14	0.001646	0.0009815	7.143	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.04	No 16	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0013	0.04	No 16	0.01305	0.01369	37.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0041	0.0028	0.04	No 16	0.004962	0.006706	6.25	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.04	No 16	0.01913	0.01449	62.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01494	0.01231	0.04	No 16	0.01363	0.002015	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.1	No 14	0.009336	0.002486	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)

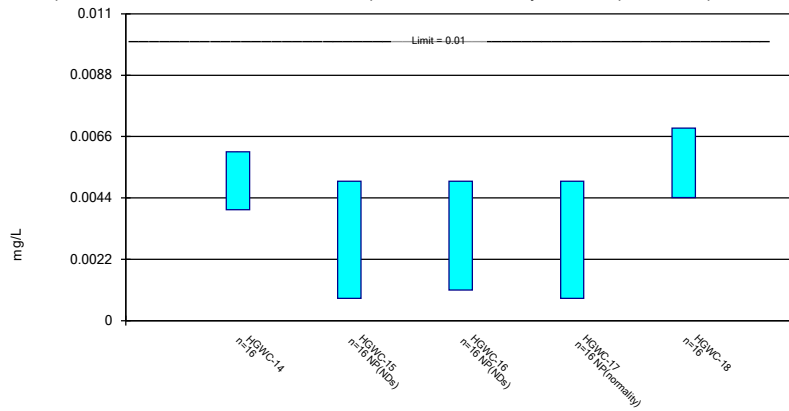
Federal Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium (mg/L)	HGWC-14	0.01423	0.006809	0.05	No	16	0.01052	0.005702	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0016	0.05	No	16	0.007944	0.003751	75	None	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No	16	0.009381	0.002478	93.75	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No	16	0.008362	0.003545	81.25	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03276	0.01722	0.05	No	16	0.02499	0.01194	6.25	None	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No	16	0.0002979	0.00002985	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No	16	0.0006125	0.0004539	56.25	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No	16	0.0005319	0.0004269	43.75	None	No	0.01	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

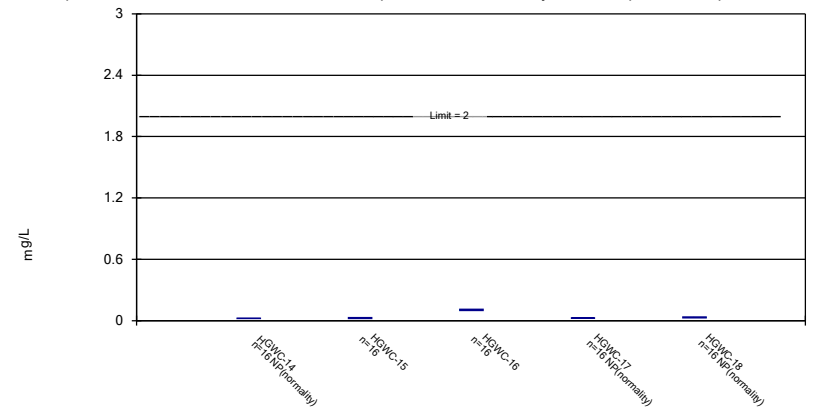
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

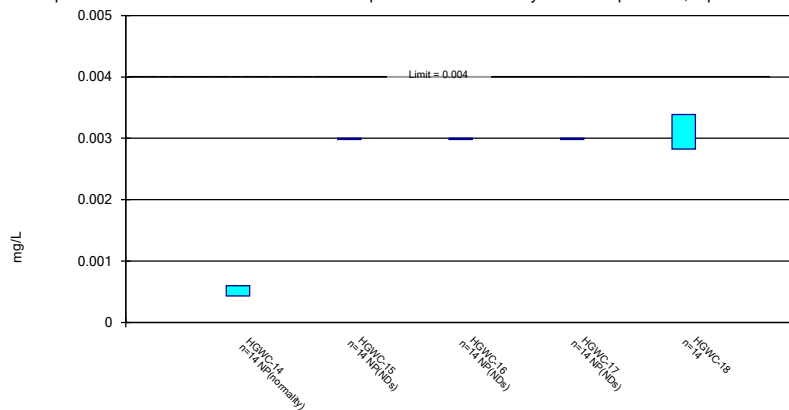
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

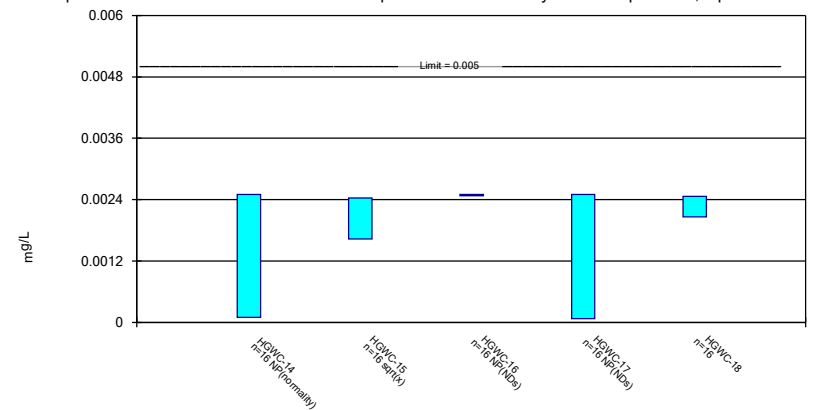
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

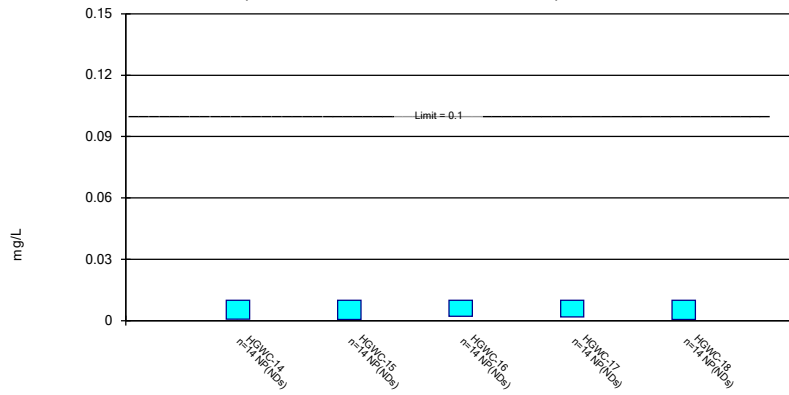
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

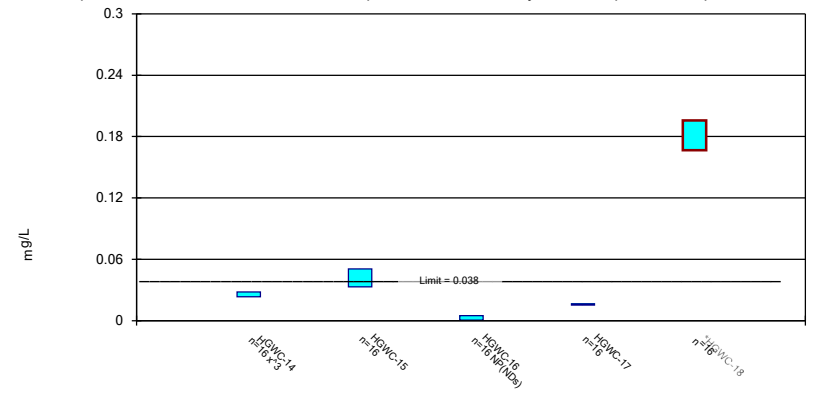
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

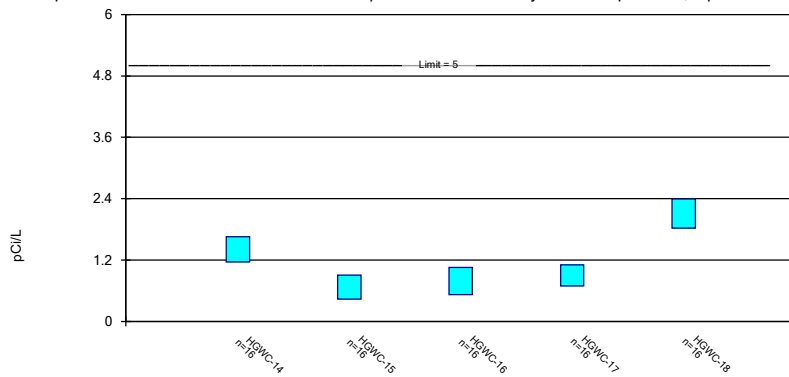
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric Confidence Interval

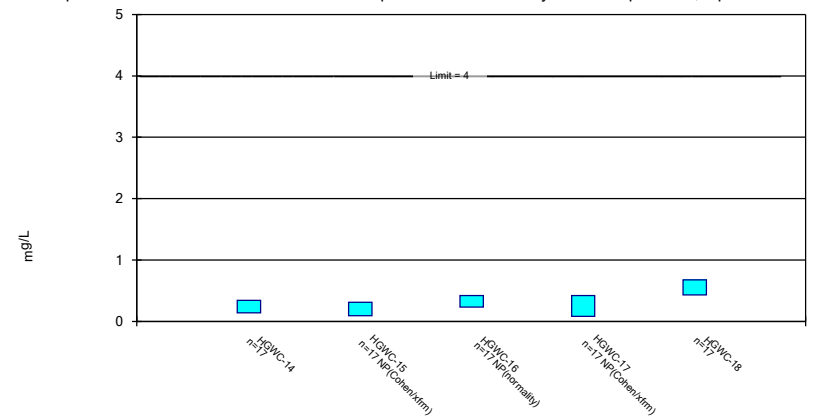
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

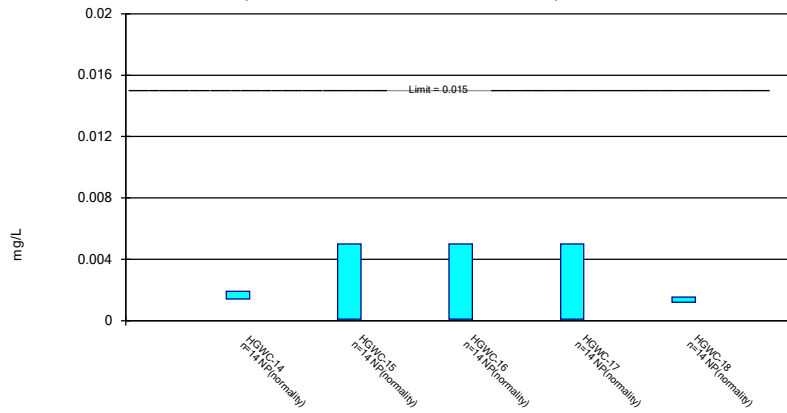
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

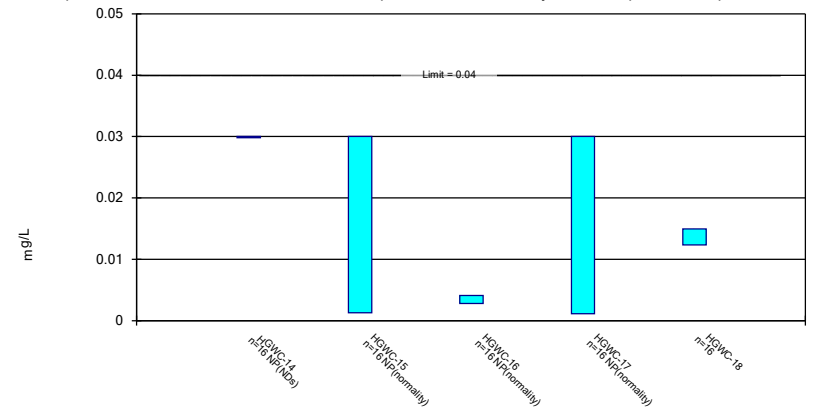
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

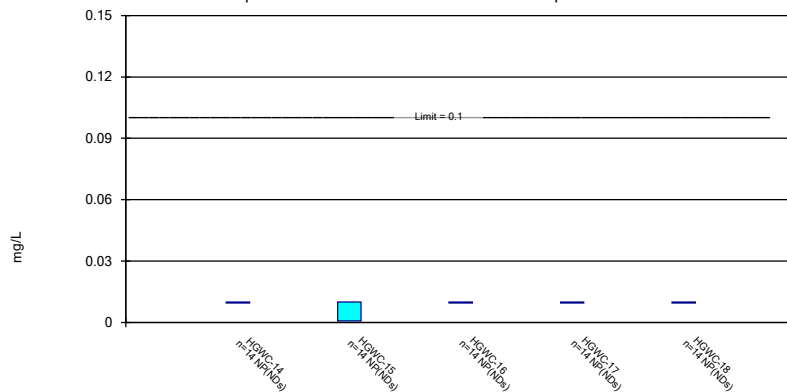
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

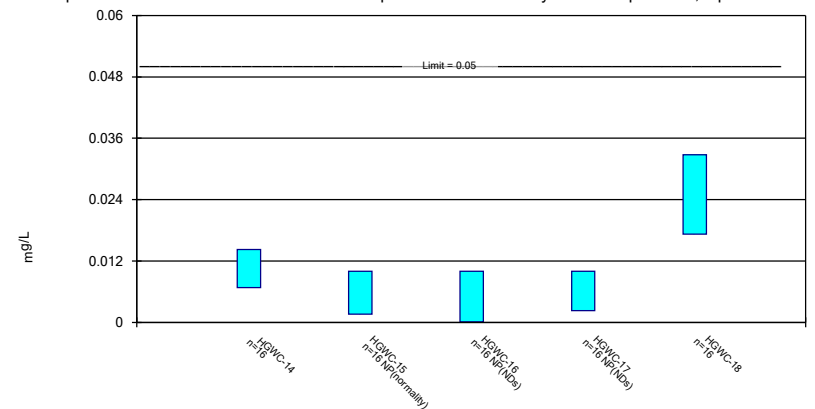
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Molybdenum Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

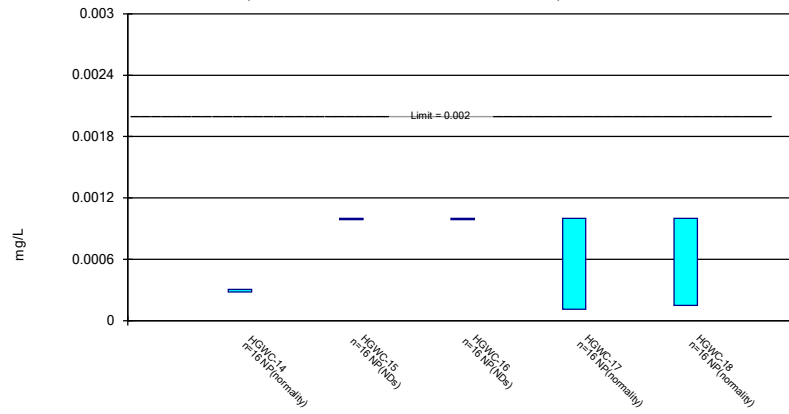
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

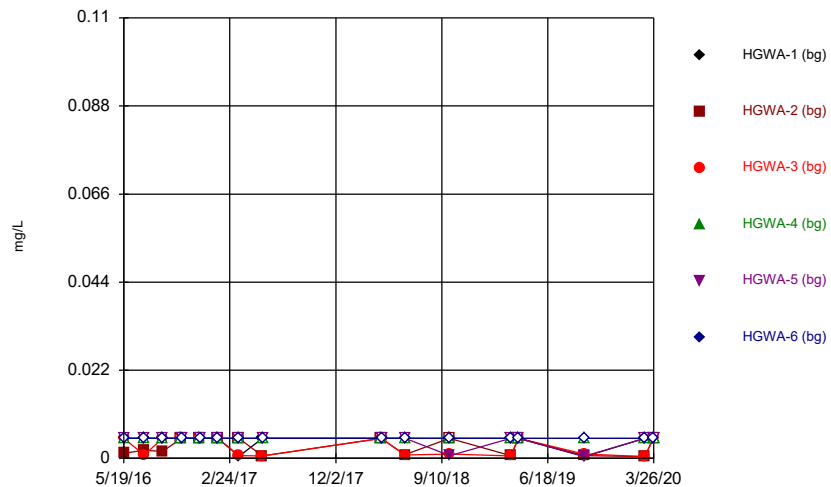


Constituent: Thallium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

ADDENDUM

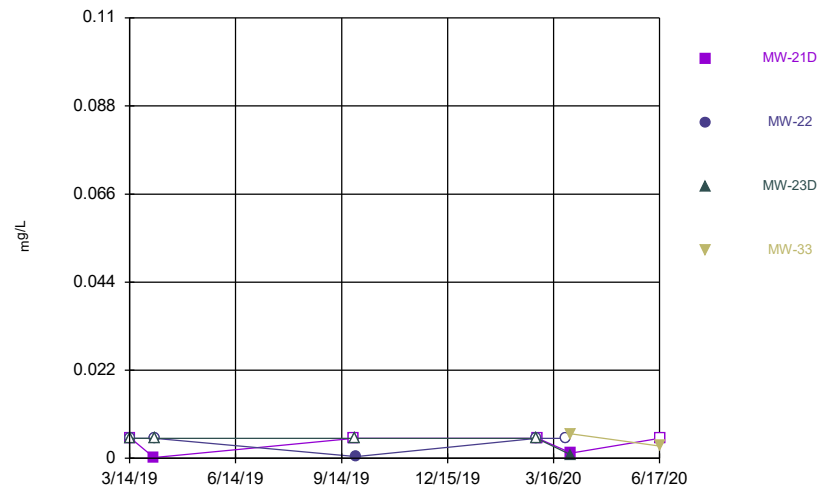
FIGURE A.

Time Series



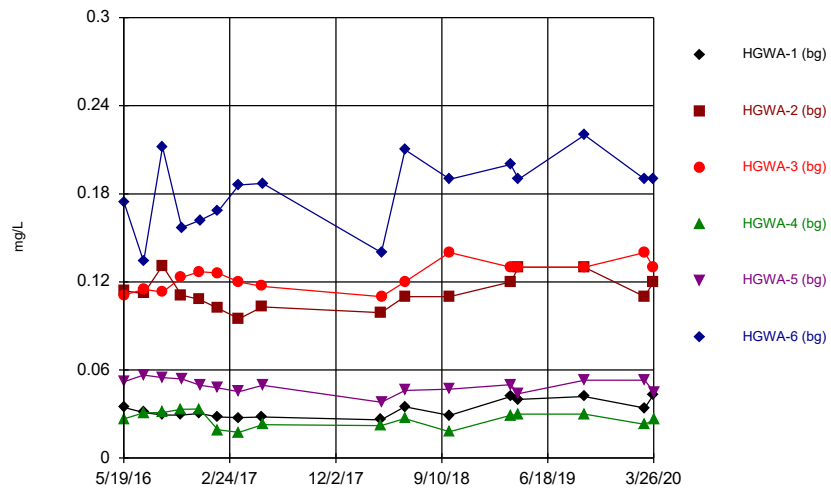
Constituent: Arsenic Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



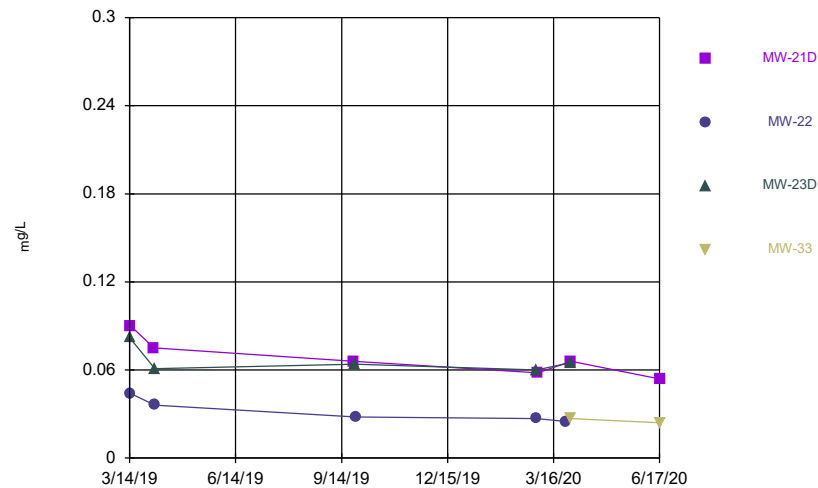
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



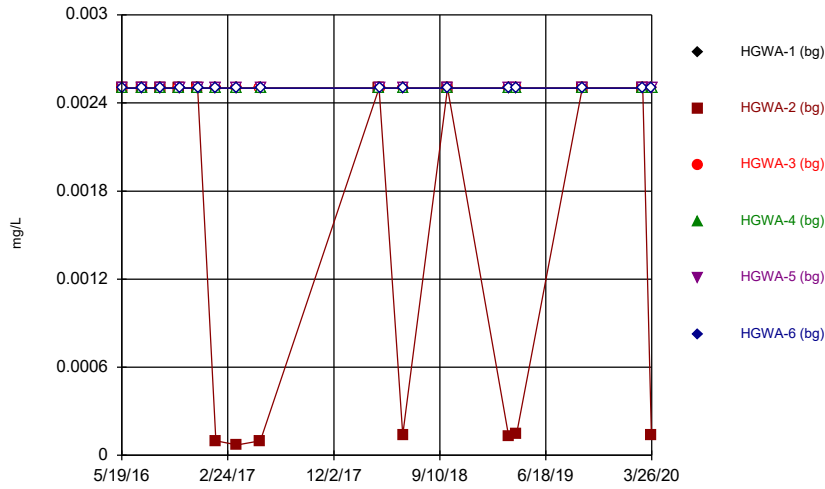
Constituent: Barium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



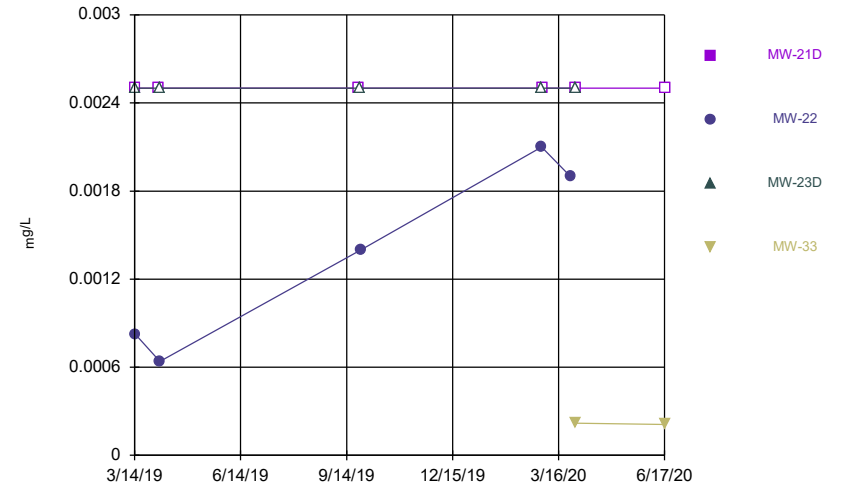
Constituent: Barium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



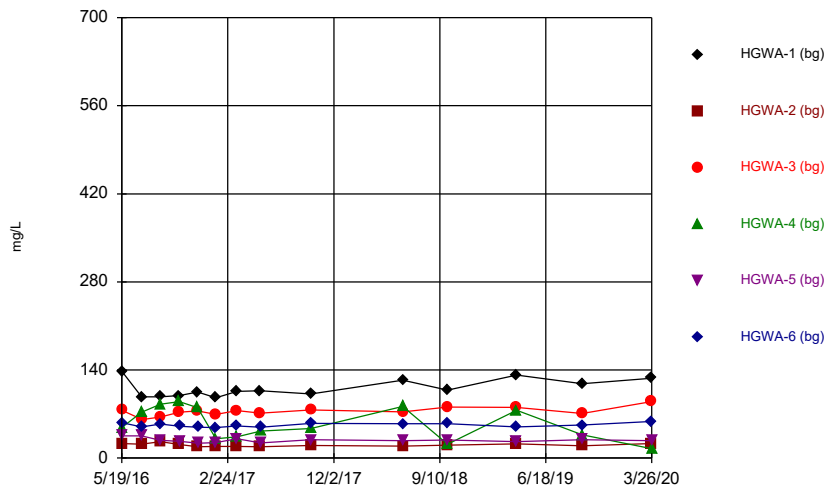
Constituent: Cadmium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



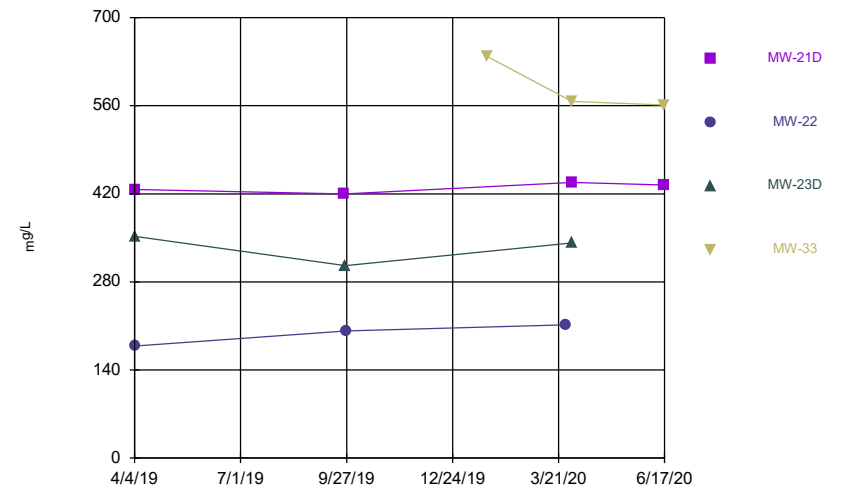
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



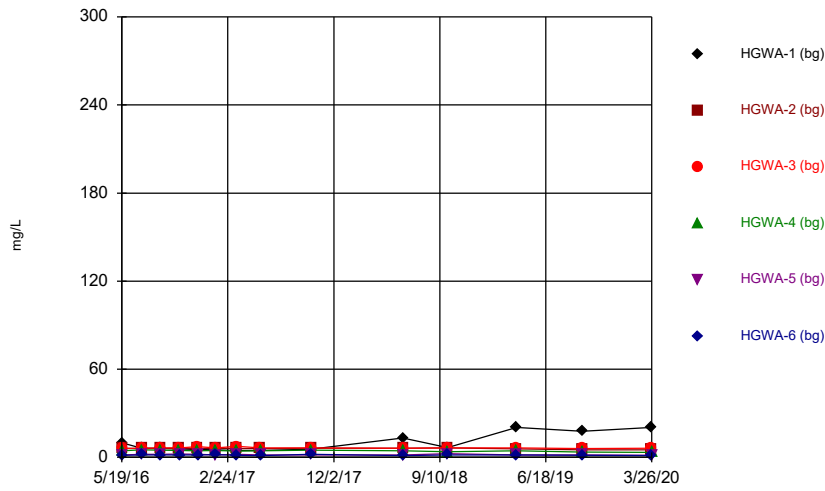
Constituent: Calcium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



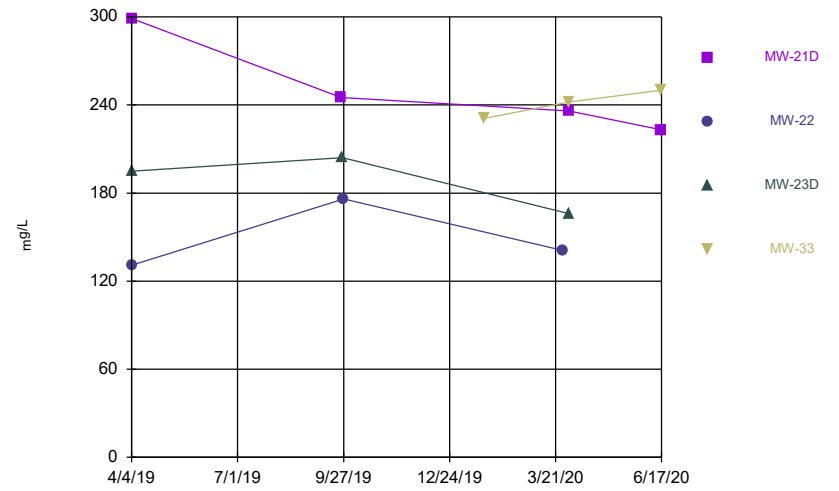
Constituent: Calcium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



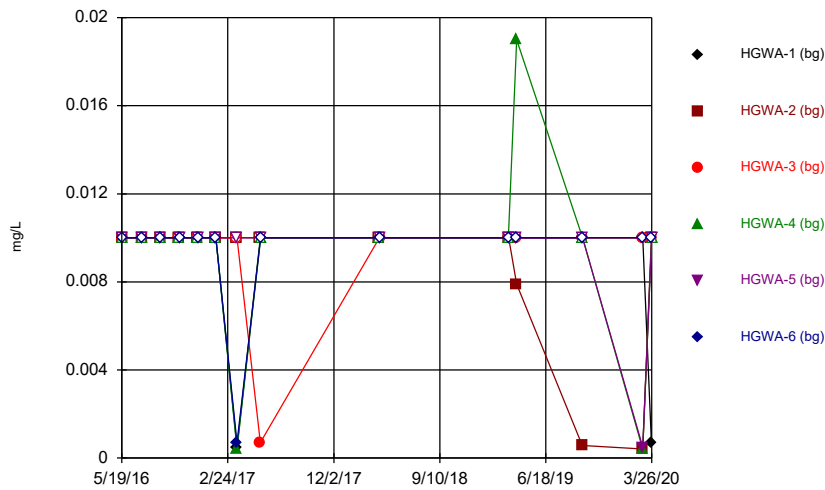
Constituent: Chloride Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



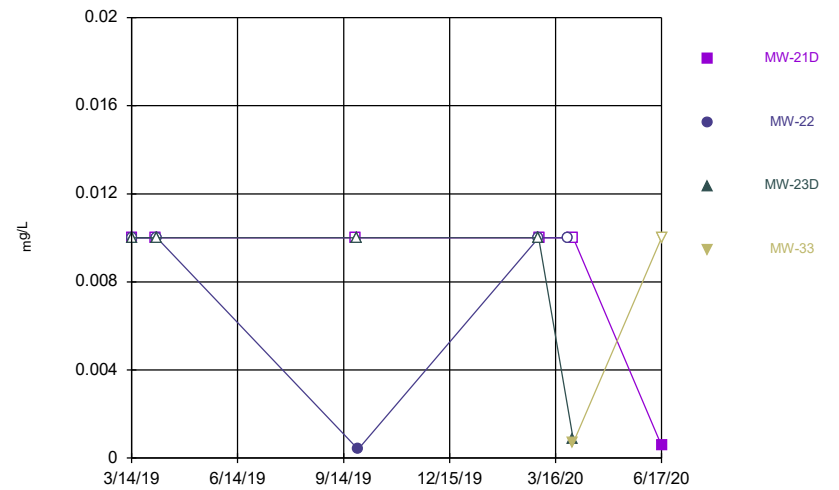
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



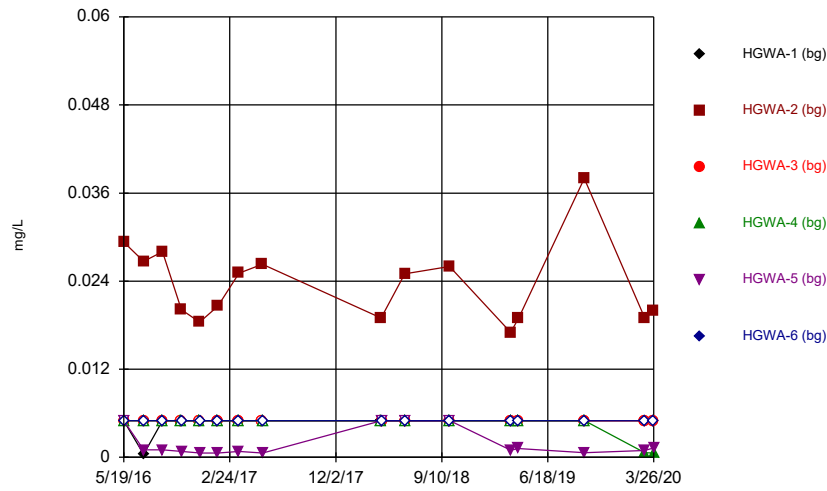
Constituent: Chromium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



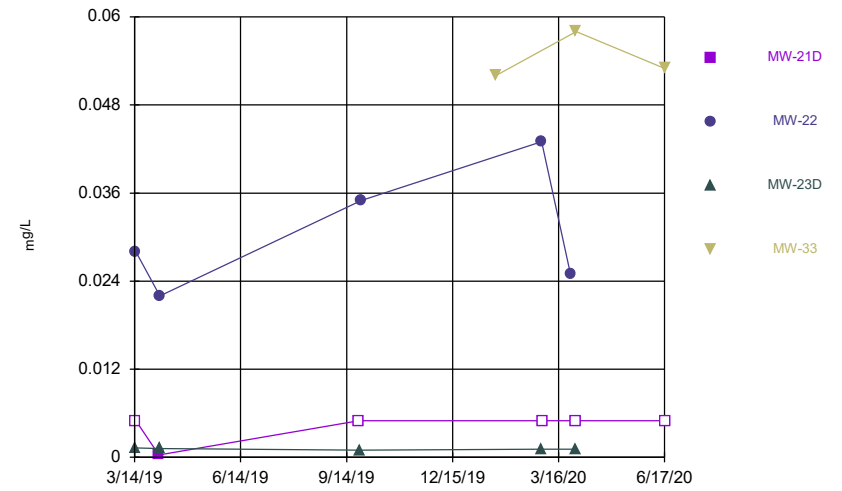
Constituent: Chromium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



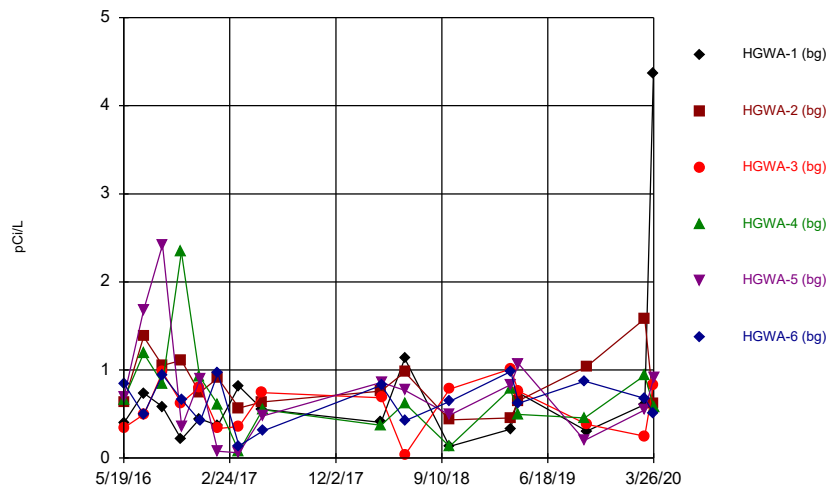
Constituent: Cobalt Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



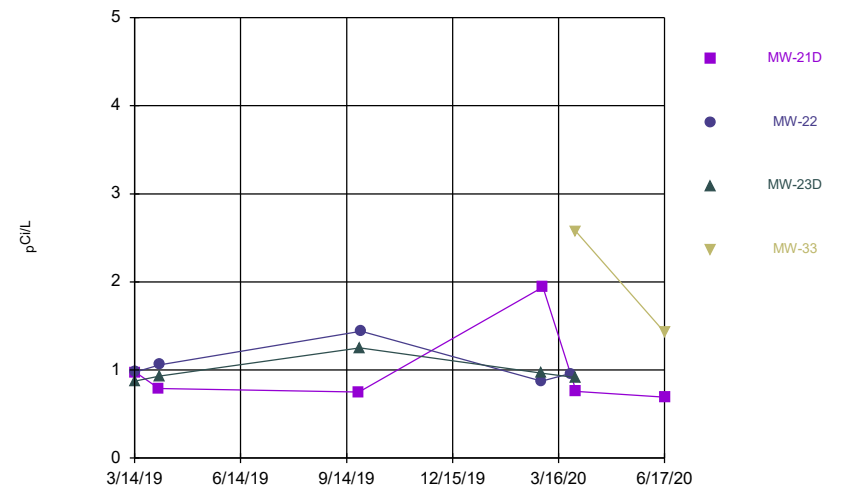
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



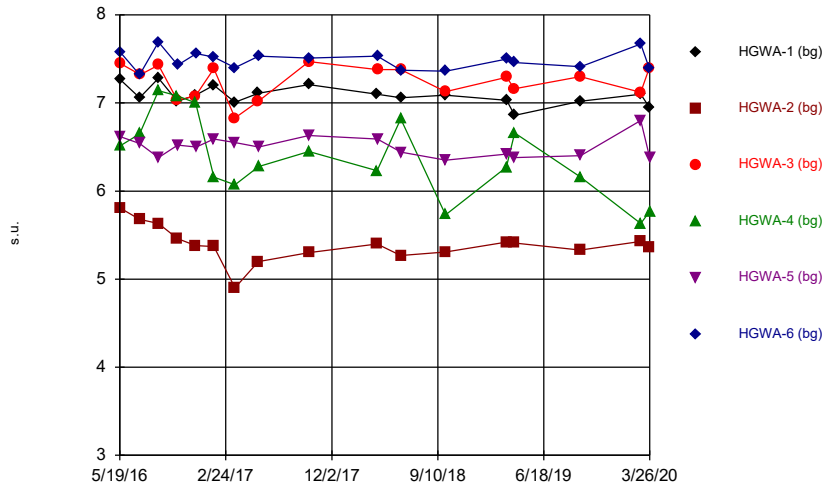
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



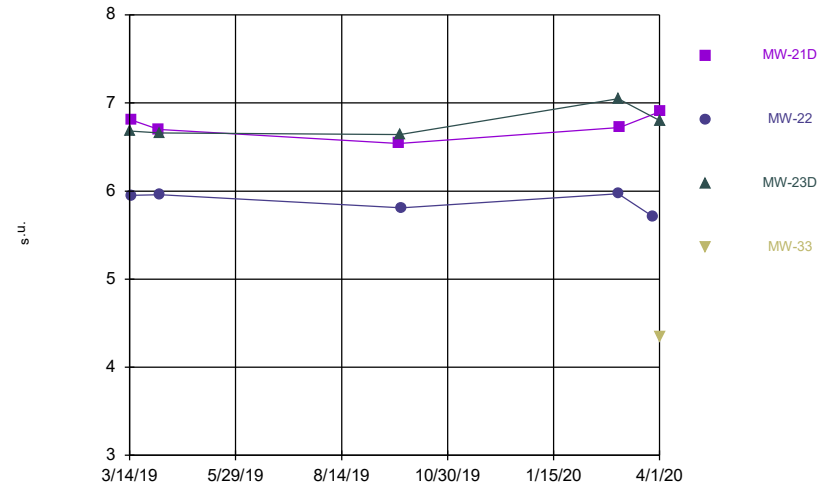
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



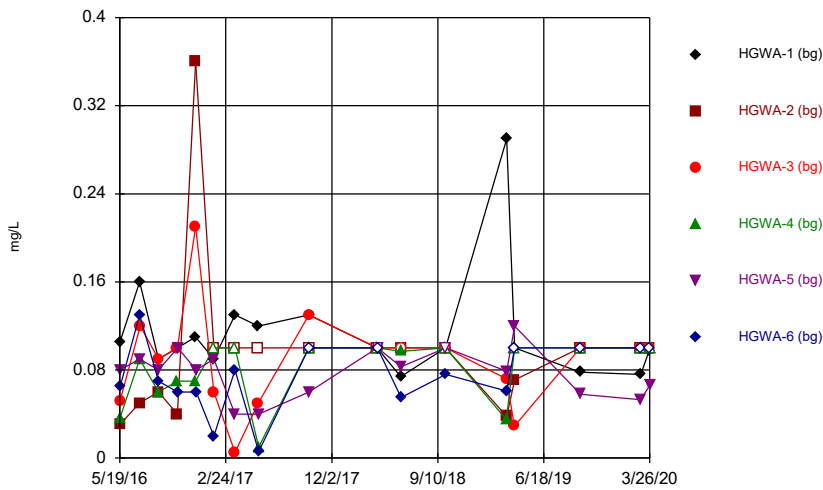
Constituent: Field pH Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



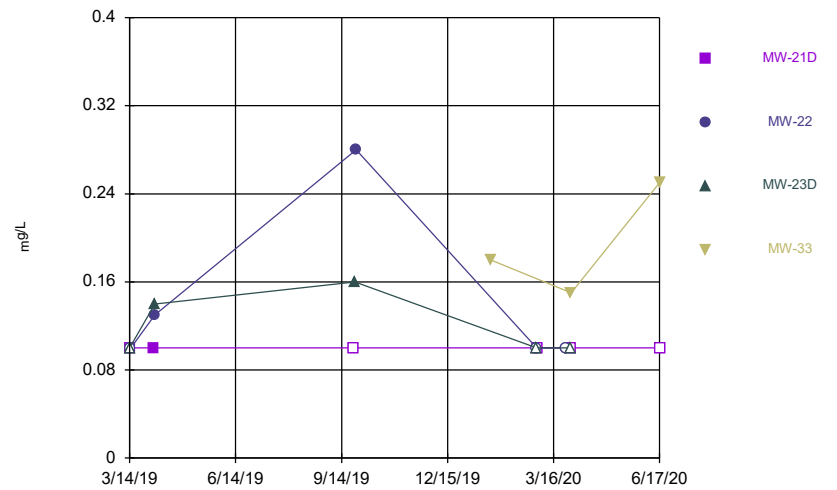
Constituent: Field pH Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



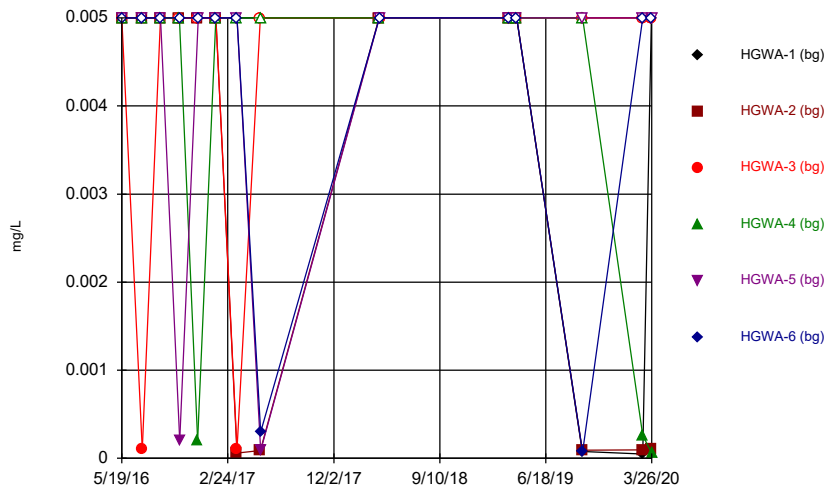
Constituent: Fluoride Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



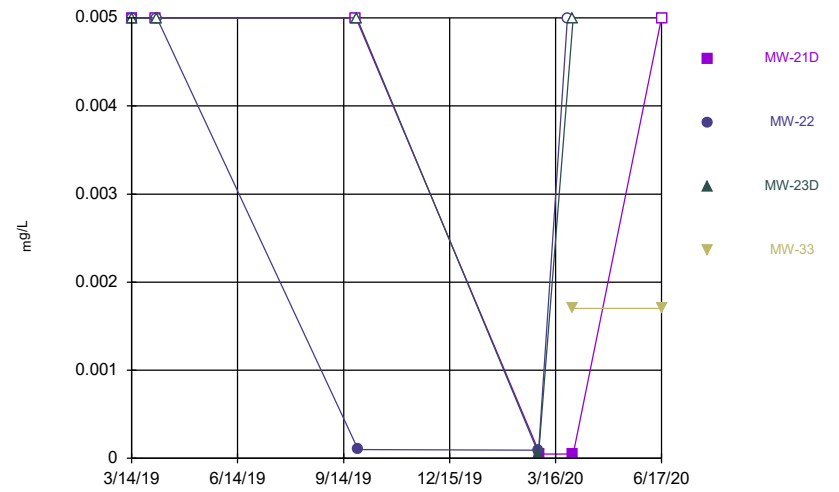
Constituent: Fluoride Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



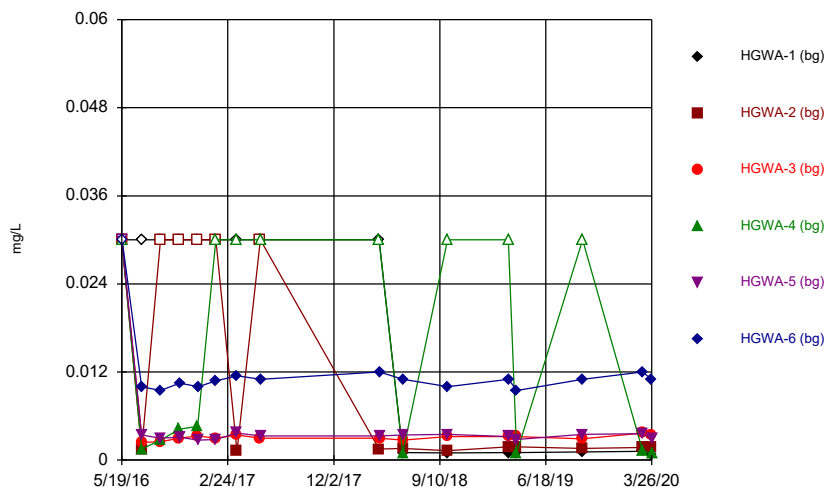
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



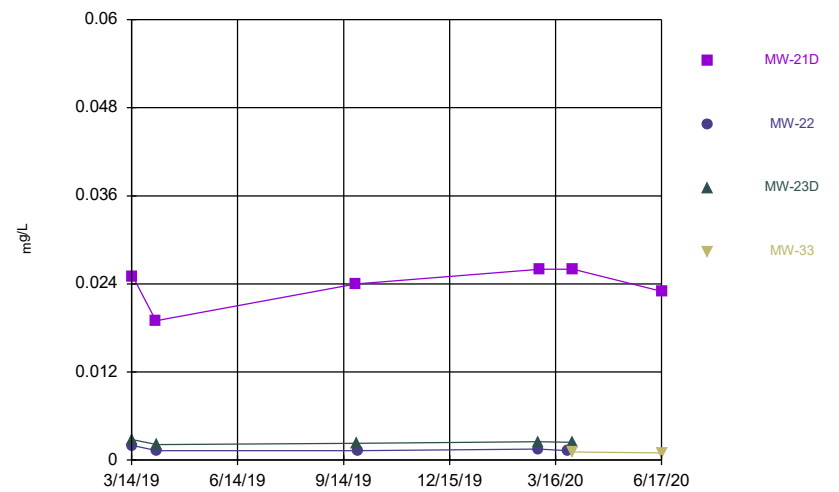
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



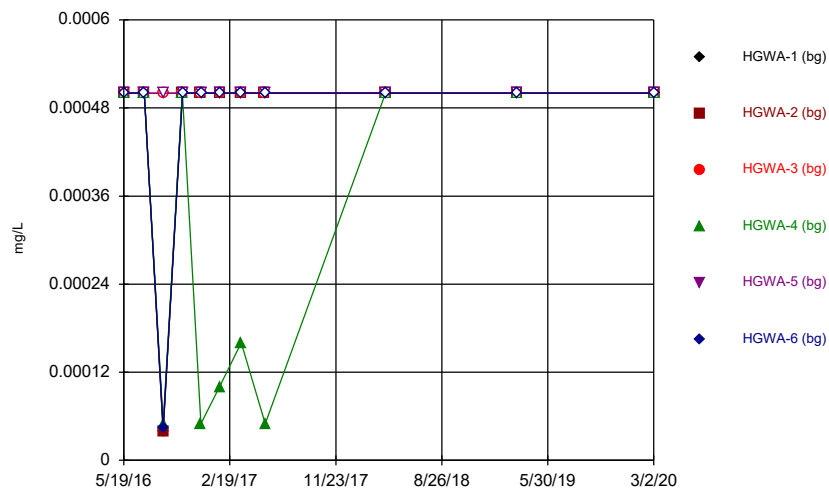
Constituent: Lithium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Lithium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



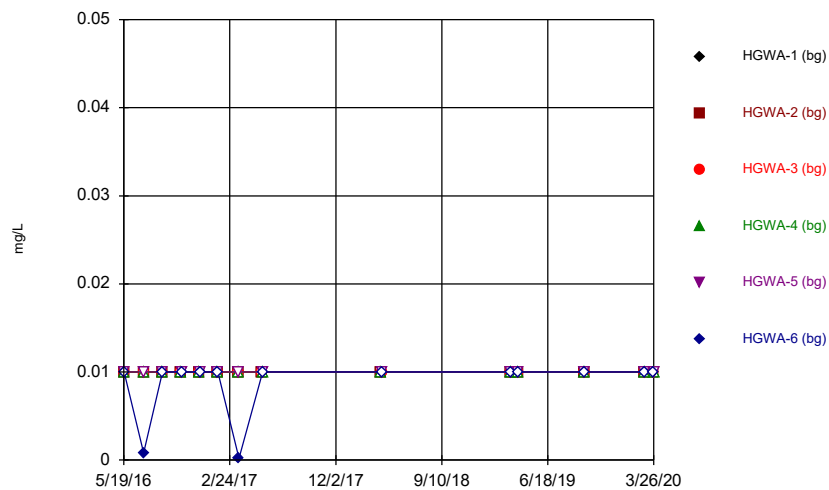
Constituent: Mercury Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



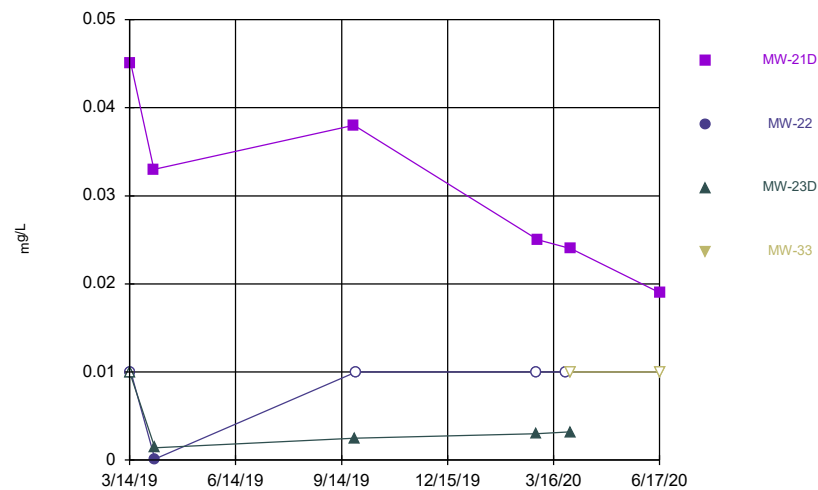
Constituent: Mercury Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



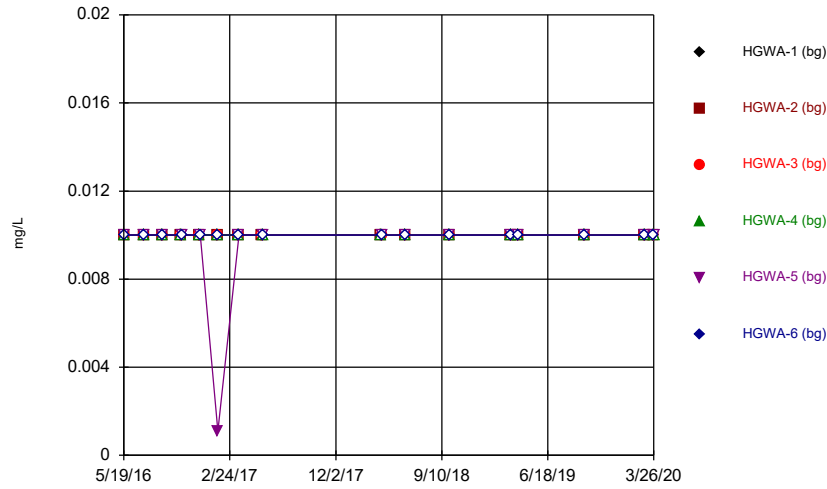
Constituent: Molybdenum Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



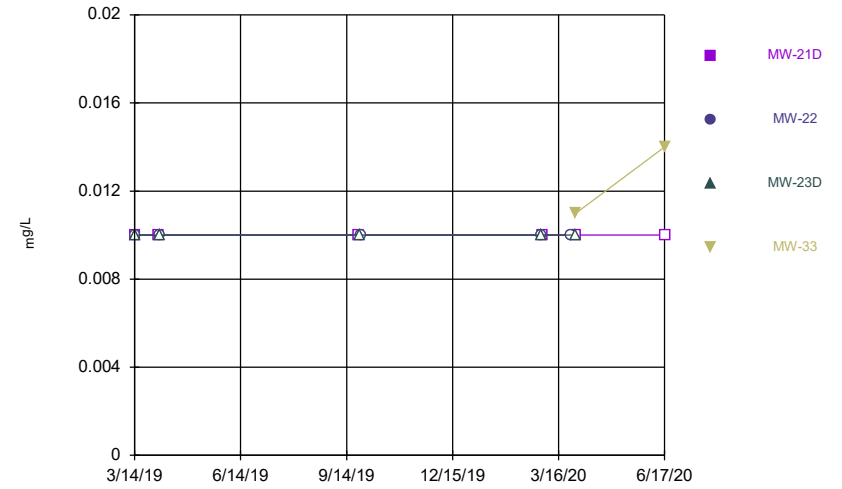
Constituent: Molybdenum Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



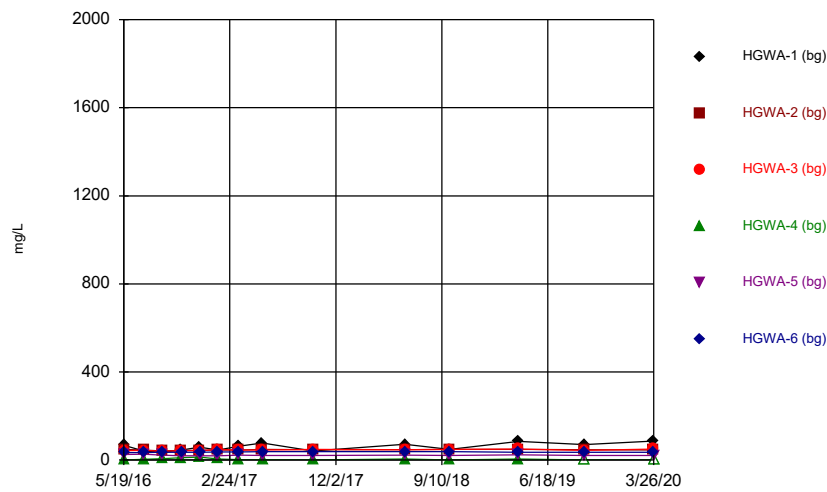
Constituent: Selenium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



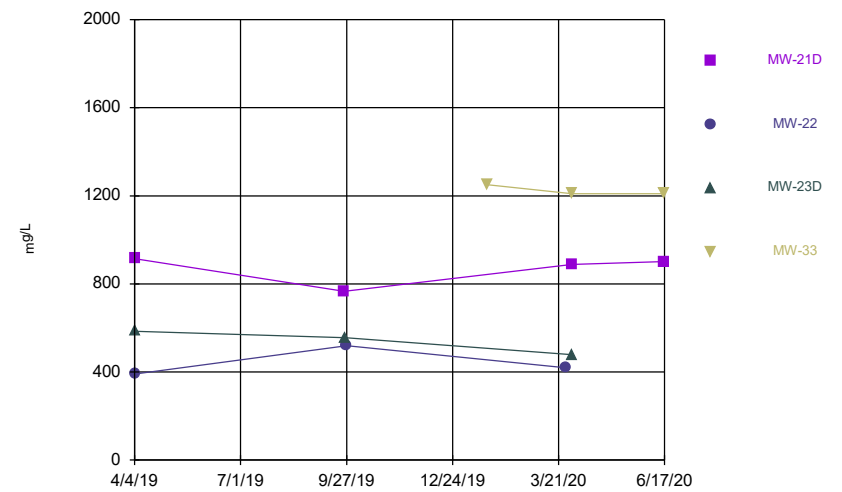
Constituent: Selenium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



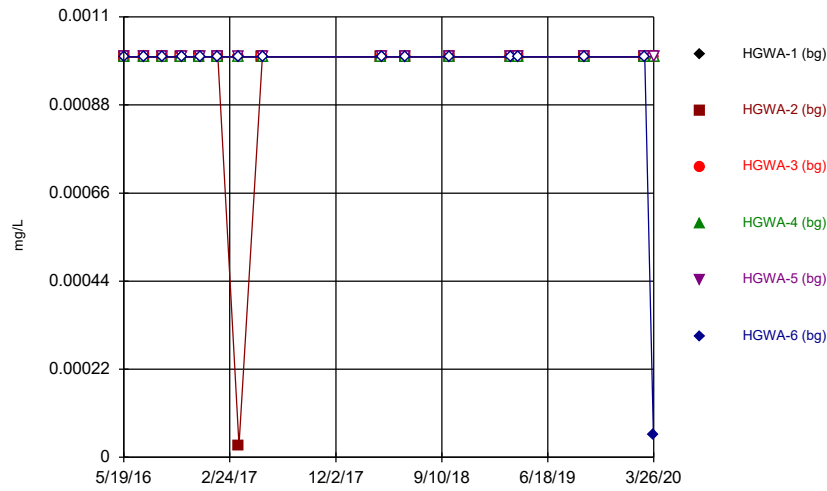
Constituent: Sulfate Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



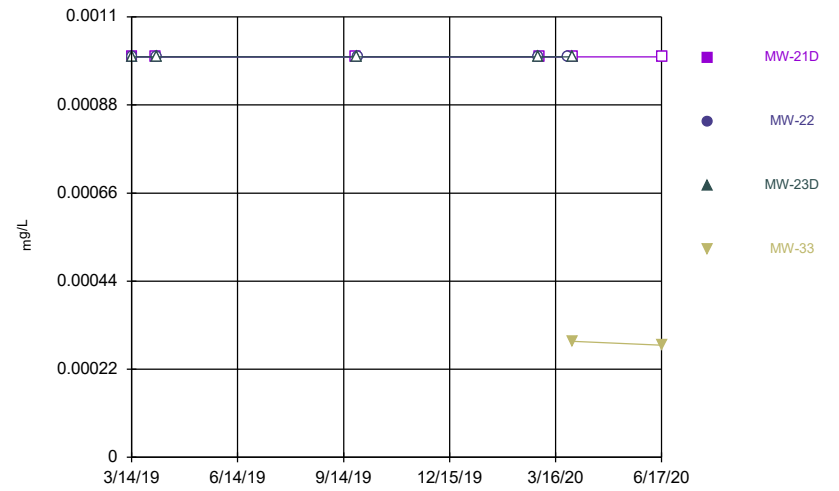
Constituent: Sulfate Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



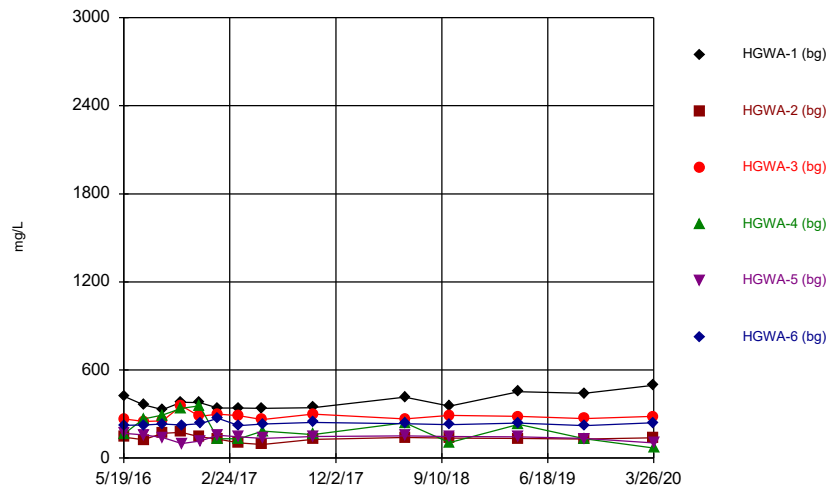
Constituent: Thallium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



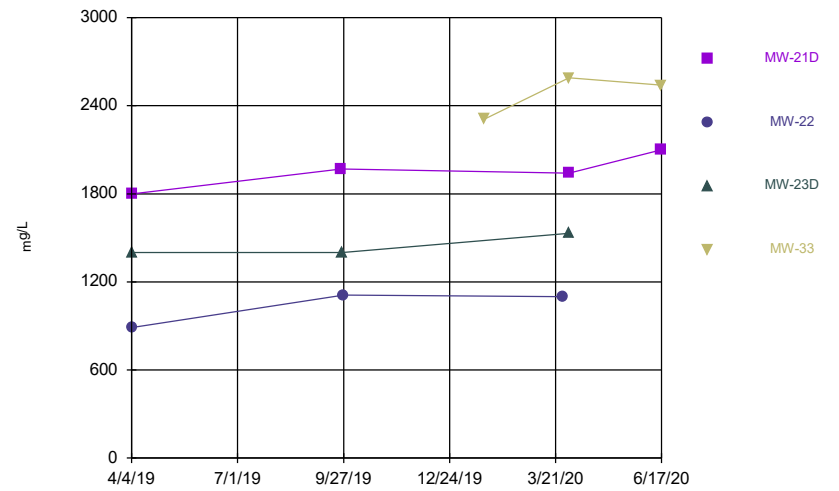
Constituent: Thallium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series

Constituent: Arsenic (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.005	0.00127 (J)	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
7/11/2016	<0.005	0.002 (J)		<0.005	<0.005	<0.005			
7/12/2016			0.0008 (J)						
8/30/2016	<0.005	0.0017 (J)	<0.005	<0.005	<0.005	<0.005			
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					<0.005	<0.005			
12/6/2016	<0.005	<0.005	<0.005	<0.005					
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
3/21/2017	0.0005 (J)	<0.005	0.0007 (J)	<0.005	<0.005	<0.005			
5/22/2017	<0.005	0.0006 (J)	0.0006 (J)						
5/23/2017				<0.005	<0.005	<0.005			
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005			
6/4/2018	<0.005	0.00088 (J)	0.0008 (J)	<0.005					
6/5/2018					<0.005	<0.005			
10/1/2018	<0.005	<0.005	0.0011 (J)	<0.005					
10/2/2018					0.00064 (J)	<0.005			
3/11/2019				<0.005					
3/12/2019	<0.005	0.00069 (J)	0.00063 (J)		<0.005	<0.005			
3/14/2019									<0.005
3/15/2019							<0.005	<0.005	
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019							0.00019 (J)		
4/5/2019								<0.005	<0.005
9/23/2019	0.00046 (J)	0.00067 (J)	0.0011 (J)						
9/24/2019				<0.005	0.00055 (J)	<0.005			
9/25/2019							<0.005		
9/26/2019									<0.005
9/27/2019								0.00045 (J)	
3/2/2020	<0.005	0.00043 (J)	0.0004 (J)	<0.005	<0.005	<0.005		<0.005	<0.005
3/3/2020							<0.005		
3/25/2020	<0.005	<0.005	<0.005			<0.005			
3/26/2020				<0.005	<0.005				
3/27/2020								<0.005	
4/1/2020							0.0013 (J)		0.00082 (J)
6/17/2020							<0.005		

Time Series

Constituent: Arsenic (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.0061
6/17/2020	0.0031 (J)

Time Series

Constituent: Barium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	0.0346	0.114	0.111	0.0266	0.0519				
5/20/2016						0.174			
7/11/2016	0.0311	0.112		0.0309	0.0565	0.134			
7/12/2016			0.115						
8/30/2016	0.0293	0.131	0.113	0.031	0.0548	0.212			
10/19/2016	0.0293	0.111	0.123	0.0332					
10/20/2016					0.0539	0.157			
12/6/2016	0.0304	0.108	0.127	0.0334					
12/8/2016					0.0496	0.162			
1/24/2017	0.028	0.102	0.126	0.0192	0.0478	0.168			
3/21/2017	0.0275	0.095	0.12	0.0175	0.0453	0.186			
5/22/2017	0.0281	0.103	0.117						
5/23/2017				0.0227	0.0496	0.187			
4/2/2018	0.026	0.099		0.022					
4/3/2018			0.11		0.038	0.14			
6/4/2018	0.035	0.11	0.12	0.027					
6/5/2018					0.046	0.21			
10/1/2018	0.029	0.11	0.14	0.018					
10/2/2018					0.047	0.19			
3/11/2019				0.029					
3/12/2019	0.042	0.12	0.13		0.05	0.2			
3/14/2019									0.082
3/15/2019							0.09	0.044	
4/1/2019			0.13						
4/2/2019	0.04	0.13		0.03	0.044	0.19			
4/4/2019							0.075		
4/5/2019								0.036	0.061
9/23/2019	0.042	0.13	0.13						
9/24/2019				0.03	0.053	0.22			
9/25/2019							0.066		
9/26/2019									0.064
9/27/2019								0.028	
3/2/2020	0.034	0.11	0.14	0.023	0.053	0.19		0.027	0.06
3/3/2020							0.058		
3/25/2020	0.043	0.12	0.13			0.19			
3/26/2020				0.026	0.045				
3/27/2020								0.025	
4/1/2020							0.066		0.065
6/17/2020							0.054		

Time Series

Constituent: Barium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.027
6/17/2020	0.024

Time Series

Constituent: Beryllium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.003	<0.003	<0.003	<0.003	<0.003				
5/20/2016						<0.003			
7/11/2016	<0.003	0.0001 (J)		<0.003	<0.003	<0.003			
7/12/2016			<0.003						
8/30/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
10/19/2016	<0.003	0.0001 (J)	<0.003	<0.003					
10/20/2016					<0.003	<0.003			
12/6/2016	<0.003	0.0002 (J)	<0.003	<0.003					
12/8/2016					<0.003	<0.003			
1/24/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
3/21/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
5/22/2017	<0.003	0.0001 (J)	<0.003						
5/23/2017				<0.003	<0.003	<0.003			
4/2/2018	<0.003	<0.003		<0.003					
4/3/2018			<0.003		<0.003	<0.003			
3/11/2019				5E-05 (J)					
3/12/2019	<0.003	0.00017 (J)	<0.003		<0.003	<0.003			
3/14/2019									<0.003
3/15/2019							<0.003	<0.003	
4/1/2019			<0.003						
4/2/2019	<0.003	0.00015 (J)		<0.003	<0.003	<0.003			
4/4/2019							<0.003		
4/5/2019								<0.003	<0.003
9/23/2019	<0.003	0.00011 (J)	<0.003						
9/24/2019				<0.003	<0.003	<0.003			
9/25/2019							<0.003		
9/26/2019									<0.003
9/27/2019								<0.003	
3/2/2020	<0.003	0.00014 (J)	<0.003	0.00019 (J)	<0.003	<0.003		<0.003	<0.003
3/3/2020							<0.003		
3/25/2020	<0.003	0.00016 (J)	<0.003			<0.003			
3/26/2020				7.6E-05 (J)	<0.003				
3/27/2020								<0.003	
4/1/2020							<0.003		<0.003
6/17/2020							<0.003		

Time Series

Constituent: Beryllium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.0011 (J)
6/17/2020	0.00099 (J)

Time Series

Constituent: Boron (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	0.0214 (J)	0.0321 (J)	<0.04	<0.04	<0.04				
5/20/2016						0.0363 (J)			
7/11/2016	0.0142 (J)	0.0337 (J)		0.0175 (J)	0.0052 (J)	0.0179 (J)			
7/12/2016			0.0074 (J)						
8/30/2016	0.0074 (J)	0.0173 (J)	<0.04	0.0072 (J)	0.0068 (J)	0.014 (J)			
10/19/2016	0.0224 (J)	0.0341 (J)	0.0085 (J)	0.018 (J)					
10/20/2016					0.0135 (J)	0.0197 (J)			
12/6/2016	0.0211 (J)	0.0326 (J)	0.0085 (J)	0.0158 (J)					
12/8/2016					0.0083 (J)	0.0159 (J)			
1/24/2017	0.0165 (J)	0.0365 (J)	0.01 (J)	0.0145 (J)	0.0072 (J)	<0.04			
3/21/2017	0.0187 (J)	0.0349 (J)	0.0079 (J)	0.0101 (J)	<0.04	0.0166 (J)			
5/22/2017	0.0782	0.0475	0.0131 (J)						
5/23/2017				0.0159 (J)	0.0095 (J)	0.0167 (J)			
10/3/2017	0.0198 (J)	0.0386 (J)	0.0097 (J)	0.0162 (J)	0.0071 (J)	0.017 (J)			
6/4/2018	0.02 (J)	0.036 (J)	0.017 (J)	0.014 (J)					
6/5/2018					0.0066 (J)	0.016 (J)			
10/1/2018	0.013 (J)	0.035 (J)	0.0061 (J)	0.0093 (J)					
10/2/2018					0.0081 (J)	0.014 (J)			
4/1/2019			0.0066 (J)						
4/2/2019	0.016 (J)	0.034 (J)		0.01 (J)	0.0052 (J)	0.013 (J)			
4/4/2019							5.2		
4/5/2019								2.1	3
9/23/2019	0.021 (J)	0.04 (J)	0.0081 (J)						
9/24/2019				0.013 (J)	0.0088 (J)	0.016 (J)			
9/25/2019							6.4		
9/26/2019									3.8
9/27/2019								2.9	
3/25/2020	0.025 (J)	0.039 (J)	0.0096 (J)			0.021 (J)			
3/26/2020				0.012 (J)	0.0072 (J)				
3/27/2020								2.4	
4/1/2020							6.3		3.5
6/17/2020							5.8		

Time Series

Constituent: Boron (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	11.2
4/1/2020	11.6
6/17/2020	10.3

Time Series

Constituent: Cadmium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025				
5/20/2016						<0.0025			
7/11/2016	<0.0025	<0.0025		<0.0025	<0.0025	<0.0025			
7/12/2016			<0.0025						
8/30/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			
10/19/2016	<0.0025	<0.0025	<0.0025	<0.0025					
10/20/2016					<0.0025	<0.0025			
12/6/2016	<0.0025	<0.0025	<0.0025	<0.0025					
12/8/2016					<0.0025	<0.0025			
1/24/2017	<0.0025	0.0001 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
3/21/2017	<0.0025	7E-05 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
5/22/2017	<0.0025	0.0001 (J)	<0.0025						
5/23/2017				<0.0025	<0.0025	<0.0025			
4/2/2018	<0.0025	<0.0025		<0.0025					
4/3/2018			<0.0025		<0.0025	<0.0025			
6/4/2018	<0.0025	0.00014 (J)	<0.0025	<0.0025					
6/5/2018					<0.0025	<0.0025			
10/1/2018	<0.0025	<0.0025	<0.0025	<0.0025					
10/2/2018					<0.0025	<0.0025			
3/11/2019				<0.0025					
3/12/2019	<0.0025	0.00013 (J)	<0.0025		<0.0025	<0.0025			
3/14/2019									<0.0025
3/15/2019							<0.0025	0.00082 (J)	
4/1/2019			<0.0025						
4/2/2019	<0.0025	0.00015 (J)		<0.0025	<0.0025	<0.0025			
4/4/2019							<0.0025		
4/5/2019								0.00064 (J)	<0.0025
9/23/2019	<0.0025	<0.0025	<0.0025						
9/24/2019				<0.0025	<0.0025	<0.0025			
9/25/2019							<0.0025		
9/26/2019									<0.0025
9/27/2019								0.0014 (J)	
3/2/2020	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025		0.0021 (J)	<0.0025
3/3/2020							<0.0025		
3/25/2020	<0.0025	0.00014 (J)	<0.0025			<0.0025			
3/26/2020				<0.0025	<0.0025				
3/27/2020								0.0019 (J)	
4/1/2020							<0.0025		<0.0025
6/17/2020							<0.0025		

Time Series

Constituent: Cadmium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.00022 (J)
6/17/2020	0.00021 (J)

Time Series

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	138	22.9	76.2	48.4	35.5				
5/20/2016						56.1			
7/11/2016	97.2	22.3		73	35.4	49.3			
7/12/2016			61.5						
8/30/2016	97.5	26.4	65.1	85.7	28	53.9			
10/19/2016	99.2	21.7	73.2	89.7					
10/20/2016					26.7	50.7			
12/6/2016	105	18.2	74.9	80					
12/8/2016					23.5	49.2			
1/24/2017	95.7	18.5	69.6	30.8	24.5	48.3			
3/21/2017	106	18.6	75.7	34	30.8	51.3			
5/22/2017	107	17.8	71.5						
5/23/2017				43	24.2	49.1			
10/3/2017	102	20.2	76.3	46.9	29	55.1			
6/4/2018	124	19.1	73.4	81.9					
6/5/2018					27.8	54.5			
10/1/2018	108	20.5 (J)	80.9	22 (J)					
10/2/2018					28.9	54.7			
4/1/2019			80.5						
4/2/2019	132	22.5 (J)		76	26.3	49.7			
4/4/2019							427		
4/5/2019								178	352
9/23/2019	118	19.5	71						
9/24/2019				36.6	29.3	52.5			
9/25/2019							420		
9/26/2019									306
9/27/2019								202	
3/25/2020	127	23	89.8			58.1			
3/26/2020				14.9	27.8				
3/27/2020								212	
4/1/2020							438		342
6/17/2020							434		

Time Series

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

1/22/2020	638
4/1/2020	567
6/17/2020	561

Time Series

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	9.94	6.14	5.93	4.56	1.57				
5/20/2016						1.35			
7/11/2016	6.3	5.9		5	2	1.7			
7/12/2016			6.2						
8/30/2016	6	6.2	6.4	4.9	2	1.6			
10/19/2016	5.8	6.1	6.5	4.6					
10/20/2016					2.2	1.6			
12/6/2016	5.4	6	7.2	4.5					
12/8/2016					2	1.6			
1/24/2017	5.2	6.1	6.4	4.7	1.6	1.9			
3/21/2017	4.6	5.9	7.5	4.3	2	1.3			
5/22/2017	4.6	5.9	6.5						
5/23/2017				4.5	1.7	1.2			
10/3/2017	5.6	6.3	6.5	4.8	1.7	2.1			
6/4/2018	13.1	6.1	6.3	4.5					
6/5/2018					1.6	1.2			
10/1/2018	6.6	6.4	6.4	3.8					
10/2/2018					2.4	1.7			
4/1/2019			6.5						
4/2/2019	20.3	5.8		4.4	1.7	1.6			
4/4/2019							299		
4/5/2019								131	195
9/23/2019	17.7	5.1	5.9						
9/24/2019				3.6	1.7	1.3			
9/25/2019							245		
9/26/2019									204
9/27/2019								176	
3/25/2020	20.4	5.2	6.1			1.2			
3/26/2020				3.4	1.4				
3/27/2020								141	
4/1/2020							236		166
6/17/2020							223		

Time Series

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

1/22/2020	231
4/1/2020	242
6/17/2020	250

Time Series

Constituent: Chromium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01						
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/21/2017	0.0005 (J)	<0.01	<0.01	0.0004 (J)	<0.01	0.0007 (J)			
5/22/2017	<0.01	<0.01	0.0007 (J)						
5/23/2017				<0.01	<0.01	<0.01			
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01			
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019									<0.01
3/15/2019							<0.01	<0.01	
4/1/2019			<0.01						
4/2/2019	<0.01	0.0079 (J)		0.019	<0.01	<0.01			
4/4/2019							<0.01		
4/5/2019								<0.01	<0.01
9/23/2019	<0.01	0.00058 (J)	<0.01						
9/24/2019				<0.01	<0.01	<0.01			
9/25/2019							<0.01		
9/26/2019									<0.01
9/27/2019								0.0004 (J)	
3/2/2020	<0.01	0.00041 (J)	<0.01	0.0004 (J)	0.0005 (J)	<0.01		<0.01	<0.01
3/3/2020							<0.01		
3/25/2020	0.00072 (J)	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01				
3/27/2020								<0.01	
4/1/2020							<0.01		0.00086 (J)
6/17/2020							0.00057 (J)		

Time Series

Constituent: Chromium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.00069 (J)
6/17/2020	<0.01

Time Series

Constituent: Cobalt (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.005	0.0293	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
7/11/2016	0.0004 (J)	0.0267		<0.005	0.001 (J)	<0.005			
7/12/2016			<0.005						
8/30/2016	<0.005	0.028	<0.005	<0.005	0.001 (J)	<0.005			
10/19/2016	<0.005	0.0201	<0.005	<0.005					
10/20/2016					0.0008 (J)	<0.005			
12/6/2016	<0.005	0.0184	<0.005	<0.005					
12/8/2016					0.0006 (J)	<0.005			
1/24/2017	<0.005	0.0206	<0.005	<0.005	0.0006 (J)	<0.005			
3/21/2017	<0.005	0.0251	<0.005	<0.005	0.0008 (J)	<0.005			
5/22/2017	<0.005	0.0263	<0.005						
5/23/2017				<0.005	0.0006 (J)	<0.005			
4/2/2018	<0.005	0.019		<0.005					
4/3/2018			<0.005		<0.005	<0.005			
6/4/2018	<0.005	0.025	<0.005	<0.005					
6/5/2018					<0.005	<0.005			
10/1/2018	<0.005	0.026	<0.005	<0.005					
10/2/2018					<0.005	<0.005			
3/11/2019				<0.005					
3/12/2019	<0.005	0.017	<0.005		0.00099 (J)	<0.005			
3/14/2019									0.0013 (J)
3/15/2019							<0.005	0.028	
4/1/2019			<0.005						
4/2/2019	<0.005	0.019		<0.005	0.0012 (J)	<0.005			
4/4/2019							0.00034 (J)		
4/5/2019								0.022	0.0012 (J)
9/23/2019	<0.005	0.038	<0.005						
9/24/2019				<0.005	0.00063 (J)	<0.005			
9/25/2019							<0.005		
9/26/2019									0.00098 (J)
9/27/2019								0.035	
3/2/2020	<0.005	0.019	<0.005	0.00063 (J)	0.00093 (J)	<0.005		0.043	0.0011 (J)
3/3/2020							<0.005		
3/25/2020	<0.005	0.02	<0.005			<0.005			
3/26/2020				0.00058 (J)	0.0013 (J)				
3/27/2020								0.025	
4/1/2020							<0.005		0.0011 (J)
6/17/2020							<0.005		

Time Series

Constituent: Cobalt (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	0.052
4/1/2020	0.058
6/17/2020	0.053

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	0.397 (U)	0.627 (U)	0.342 (U)	0.662 (U)	0.685 (U)				
5/20/2016						0.843 (U)			
7/11/2016	0.738 (U)	1.38		1.19	1.68	0.494 (U)			
7/12/2016			0.499 (U)						
8/30/2016	0.581 (U)	1.05 (U)	0.976 (U)	0.847 (U)	2.42	0.946 (U)			
10/19/2016	0.213 (U)	1.11 (U)	0.626 (U)	2.34					
10/20/2016					0.351 (U)	0.664 (U)			
12/6/2016	0.444 (U)	0.741 (U)	0.805 (U)	0.925 (U)					
12/8/2016					0.905 (U)	0.421 (U)			
1/24/2017	0.373 (U)	0.908 (U)	0.336 (U)	0.607 (U)	0.0774 (U)	0.965 (U)			
3/21/2017	0.816 (U)	0.567 (U)	0.358 (U)	0.074 (U)	0.0599 (U)	0.139 (U)			
5/22/2017	0.554 (U)	0.638 (U)	0.744 (U)						
5/23/2017				0.55 (U)	0.477 (U)	0.308 (U)			
4/2/2018	0.405 (U)	0.761 (U)		0.371 (U)					
4/3/2018			0.684 (U)		0.858 (U)	0.828 (U)			
6/4/2018	1.13 (U)	0.975 (U)	0.0291 (U)	0.622 (U)					
6/5/2018					0.767 (U)	0.424 (U)			
10/1/2018	0.132 (U)	0.434 (U)	0.781 (U)	0.132 (U)					
10/2/2018					0.489 (U)	0.643 (U)			
3/11/2019				0.781 (U)					
3/12/2019	0.327 (U)	0.454 (U)	1.01 (U)		0.833 (U)	0.982 (U)			
3/14/2019									0.872 (U)
3/15/2019							0.972 (U)	0.977	
4/1/2019			0.76 (U)						
4/2/2019	0.739 (U)	0.651 (U)		0.494 (U)	1.07 (U)	0.621 (U)			
4/4/2019							0.791 (U)		
4/5/2019								1.06 (U)	0.932 (U)
9/24/2019				0.455 (U)	0.201 (U)	0.874 (U)			
9/25/2019							0.751 (U)		
9/26/2019									1.25
9/27/2019								1.44 (U)	
9/30/2019	0.306 (U)	1.04 (U)	0.384 (U)						
3/2/2020	0.61 (U)	1.58	0.249 (U)	0.937 (U)	0.547 (U)	0.676 (U)		0.872 (U)	0.964 (U)
3/3/2020							1.94		
3/25/2020	4.36	0.621 (U)	0.833 (U)			0.509 (U)			
3/26/2020				0.578 (U)	0.907 (U)				
3/27/2020								0.96 (U)	
4/1/2020							0.758 (U)		0.914 (U)
6/17/2020							0.691 (U)		

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
4/1/2020	2.57
6/17/2020	1.43 (U)

Time Series

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	7.27	5.81	7.45	6.51	6.62				
5/20/2016						7.58			
7/11/2016	7.06	5.68		6.65	6.54	7.32			
7/12/2016			7.32						
8/30/2016	7.28	5.63	7.43	7.14	6.38	7.69			
10/19/2016	7.02	5.46	7.03	7.08					
10/20/2016					6.52	7.43			
12/6/2016	7.09	5.38	7.08	7					
12/8/2016					6.5	7.56			
1/24/2017	7.2	5.37	7.39	6.16	6.59	7.52			
3/21/2017	7.01	4.9	6.83	6.07	6.55	7.4			
5/22/2017	7.11	5.2	7.02						
5/23/2017				6.28	6.5	7.53			
10/3/2017	7.21	5.3	7.47	6.45	6.63	7.51			
4/2/2018	7.1	5.4		6.23					
4/3/2018			7.38		6.59	7.53			
6/4/2018	7.06	5.27	7.38	6.82					
6/5/2018					6.44	7.37			
10/1/2018	7.09	5.31	7.13	5.73					
10/2/2018					6.35	7.36			
3/11/2019				6.27					
3/12/2019	7.03	5.42	7.29		6.42	7.5			
3/14/2019									6.68
3/15/2019							6.81	5.95	
4/1/2019			7.16						
4/2/2019	6.86	5.41		6.66	6.38	7.46			
4/4/2019							6.7		
4/5/2019								5.96	6.66
9/23/2019	7.02	5.33	7.3						
9/24/2019				6.16	6.4	7.41			
9/25/2019							6.54		
9/26/2019									6.64
9/27/2019								5.81	
3/2/2020	7.1	5.43	7.12	5.63	6.8	7.67		5.97	7.05
3/3/2020							6.72		
3/25/2020	6.95	5.36	7.4			7.39			
3/26/2020				5.77	6.38				
3/27/2020								5.71	
4/1/2020							6.9		6.8

Time Series

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
4/1/2020	4.35

Time Series

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	0.105 (J)	0.0303 (J)	0.0513 (J)	0.036 (J)	0.08 (J)				
5/20/2016						0.065 (J)			
7/11/2016	0.16 (J)	0.05 (J)		0.09 (J)	0.09 (J)	0.13 (J)			
7/12/2016			0.12 (J)						
8/30/2016	0.09 (J)	0.06 (J)	0.09 (J)	0.06 (J)	0.08 (J)	0.07 (J)			
10/19/2016	0.1 (J)	0.04 (J)	0.1 (J)	0.07 (J)					
10/20/2016					0.1 (J)	0.06 (J)			
12/6/2016	0.11 (J)	0.36	0.21 (J)	0.07 (J)					
12/8/2016					0.08 (J)	0.06 (J)			
1/24/2017	0.09 (J)	<0.1	0.06 (J)	<0.1	0.09 (J)	0.02 (J)			
3/21/2017	0.13 (J)	<0.1	0.005 (J)	<0.1	0.04 (J)	0.08 (J)			
5/22/2017	0.12 (J)	<0.1	0.05 (J)						
5/23/2017				0.01 (J)	0.04 (J)	0.006 (J)			
10/3/2017	0.13 (J)	<0.1	0.13 (J)	<0.1	0.06 (J)	<0.1			
4/2/2018	<0.1	<0.1		<0.1					
4/3/2018			<0.1		<0.1	<0.1			
6/4/2018	0.074 (J)	<0.1	<0.1	0.097 (J)					
6/5/2018					0.083 (J)	0.055 (J)			
10/1/2018	<0.1	<0.1	<0.1	<0.1					
10/2/2018					<0.1	0.076 (J)			
3/11/2019				0.035 (J)					
3/12/2019	0.29 (J)	0.038 (J)	0.072 (J)		0.079 (J)	0.061 (J)			
3/14/2019									<0.1
3/15/2019							<0.1	<0.1	
4/1/2019			0.029 (J)						
4/2/2019	0.1 (J)	0.071 (J)		<0.1	0.12 (J)	<0.1			
4/4/2019							0.1 (J)		
4/5/2019								0.13 (J)	0.14 (J)
9/23/2019	0.078 (J)	<0.1	<0.1						
9/24/2019				<0.1	0.058 (J)	<0.1			
9/25/2019							<0.1		
9/26/2019									0.16 (J)
9/27/2019								0.28 (J)	
3/2/2020	0.076 (J)	<0.1	<0.1	<0.1	0.053 (J)	<0.1		<0.1	<0.1
3/3/2020							<0.1		
3/25/2020	0.098 (J)	<0.1	<0.1			<0.1			
3/26/2020				<0.1	0.066 (J)				
3/27/2020								<0.1	
4/1/2020							<0.1		<0.1
6/17/2020							<0.1		

Time Series

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	0.18 (J)
4/1/2020	0.15 (J)
6/17/2020	0.25

Time Series

Constituent: Lead (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.005	<0.005	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
7/11/2016	<0.005	<0.005		<0.005	<0.005	<0.005			
7/12/2016			0.0001 (J)						
8/30/2016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					0.0002 (J)	<0.005			
12/6/2016	<0.005	<0.005	<0.005	0.0002 (J)					
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
3/21/2017	<0.005	6E-05 (J)	0.0001 (J)	<0.005	<0.005	<0.005			
5/22/2017	<0.005	9E-05 (J)	<0.005						
5/23/2017				<0.005	9E-05 (J)	0.0003 (J)			
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005			
3/11/2019				<0.005					
3/12/2019	<0.005	<0.005	<0.005		<0.005	<0.005			
3/14/2019									<0.005
3/15/2019							<0.005	<0.005	
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019							<0.005		
4/5/2019								<0.005	<0.005
9/23/2019	7.8E-05 (J)	9.2E-05 (J)	<0.005						
9/24/2019				<0.005	<0.005	7.1E-05 (J)			
9/25/2019							<0.005		
9/26/2019									<0.005
9/27/2019								0.0001 (J)	
3/2/2020	4.8E-05 (J)	9.5E-05 (J)	<0.005	0.00026 (J)	<0.005	<0.005		9.4E-05 (J)	5.1E-05 (J)
3/3/2020							4.7E-05 (J)		
3/25/2020	<0.005	0.00011 (J)	<0.005			<0.005			
3/26/2020				5.9E-05 (J)	<0.005				
3/27/2020								<0.005	
4/1/2020							4.8E-05 (J)		<0.005
6/17/2020							<0.005		

Time Series

Constituent: Lead (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.0017 (J)
6/17/2020	0.0017 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.03	<0.03	<0.03	<0.03	<0.03				
5/20/2016						<0.03			
7/11/2016	<0.03	0.0014 (J)		0.0015 (J)	0.0034 (J)	0.01 (J)			
7/12/2016			0.0024 (J)						
8/30/2016	<0.03	<0.03	0.0025 (J)	0.0027 (J)	0.003 (J)	0.0095 (J)			
10/19/2016	<0.03	<0.03	0.003 (J)	0.0042 (J)					
10/20/2016					0.0031 (J)	0.0105 (J)			
12/6/2016	<0.03	<0.03	0.0033 (J)	0.0046 (J)					
12/8/2016					0.0027 (J)	0.01 (J)			
1/24/2017	<0.03	<0.03	0.003 (J)	<0.03	0.0028 (J)	0.0108 (J)			
3/21/2017	<0.03	0.0012 (J)	0.0034 (J)	<0.03	0.0037 (J)	0.0115 (J)			
5/22/2017	<0.03	<0.03	0.003 (J)						
5/23/2017				<0.03	0.0033 (J)	0.011 (J)			
4/2/2018	<0.03	0.0015 (J)		<0.03					
4/3/2018			0.003 (J)		0.0033 (J)	0.012 (J)			
6/4/2018	0.001 (J)	0.0016 (J)	0.0027 (J)	0.00097 (J)					
6/5/2018					0.0034 (J)	0.011 (J)			
10/1/2018	0.00099 (J)	0.0013 (J)	0.0032 (J)	<0.03					
10/2/2018					0.0035 (J)	0.01 (J)			
3/11/2019				<0.03					
3/12/2019	0.001 (J)	0.0018 (J)	0.0032 (J)		0.0032 (J)	0.011 (J)			
3/14/2019									0.0028 (J)
3/15/2019							0.025 (J)	0.002 (J)	
4/1/2019			0.0032 (J)						
4/2/2019	0.001 (J)	0.0018 (J)		0.00098 (J)	0.0028 (J)	0.0095 (J)			
4/4/2019							0.019 (J)		
4/5/2019								0.0013 (J)	0.0021 (J)
9/23/2019	0.0011 (J)	0.0016 (J)	0.0029 (J)						
9/24/2019				<0.03	0.0035 (J)	0.011 (J)			
9/25/2019							0.024 (J)		
9/26/2019									0.0023 (J)
9/27/2019								0.0013 (J)	
3/2/2020	0.0012 (J)	0.0017 (J)	0.0037 (J)	0.0012 (J)	0.0036 (J)	0.012		0.0015 (J)	0.0025 (J)
3/3/2020							0.026 (J)		
3/25/2020	0.00083 (J)	0.0017 (J)	0.0035 (J)			0.011 (J)			
3/26/2020				0.00095 (J)	0.0029 (J)				
3/27/2020								0.0013 (J)	
4/1/2020							0.026 (J)		0.0024 (J)
6/17/2020							0.023 (J)		

Time Series

Constituent: Lithium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.0011 (J)
6/17/2020	0.00097 (J)

Time Series

Constituent: Mercury (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				
5/20/2016						<0.0005			
7/11/2016	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005			
7/12/2016			<0.0005						
8/30/2016	4E-05 (J)	4E-05 (J)	<0.0005	5E-05 (J)	<0.0005	4.4E-05 (J)			
10/19/2016	<0.0005	<0.0005	<0.0005	<0.0005					
10/20/2016					<0.0005	<0.0005			
12/6/2016	<0.0005	<0.0005	<0.0005	5E-05 (J)					
12/8/2016					<0.0005	<0.0005			
1/24/2017	<0.0005	<0.0005	<0.0005	0.0001 (J)	<0.0005	<0.0005			
3/21/2017	<0.0005	<0.0005	<0.0005	0.00016 (J)	<0.0005	<0.0005			
5/22/2017	<0.0005	<0.0005	<0.0005						
5/23/2017				5E-05 (J)	<0.0005	<0.0005			
4/2/2018	<0.0005	<0.0005		<0.0005					
4/3/2018			<0.0005		<0.0005	<0.0005			
3/11/2019				<0.0005					
3/12/2019	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005			
3/14/2019									<0.0005
3/15/2019							<0.0005	<0.0005	
3/2/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
3/3/2020							<0.0005		

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
7/11/2016	<0.01	<0.01		<0.01	<0.01	0.0008 (J)			
7/12/2016			<0.01						
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	0.0002 (J)			
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01			
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019									<0.01
3/15/2019							0.045	<0.01	
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019							0.033		
4/5/2019								0.00013 (J)	0.0014 (J)
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01			
9/25/2019							0.038		
9/26/2019									0.0025 (J)
9/27/2019								<0.01	
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	0.003 (J)
3/3/2020							0.025		
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01				
3/27/2020								<0.01	
4/1/2020							0.024		0.0032 (J)
6/17/2020							0.019		

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	<0.01
6/17/2020	<0.01

Time Series

Constituent: Selenium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01						
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	0.0011 (J)	<0.01			
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01			
6/4/2018	<0.01	<0.01	<0.01	<0.01					
6/5/2018					<0.01	<0.01			
10/1/2018	<0.01	<0.01	<0.01	<0.01					
10/2/2018					<0.01	<0.01			
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019									<0.01
3/15/2019							<0.01	<0.01	
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019							<0.01		
4/5/2019								<0.01	<0.01
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01			
9/25/2019							<0.01		
9/26/2019									<0.01
9/27/2019								<0.01	
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01
3/3/2020							<0.01		
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01				
3/27/2020								<0.01	
4/1/2020							<0.01		<0.01
6/17/2020							<0.01		

Time Series

Constituent: Selenium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
4/1/2020	0.011
6/17/2020	0.014

Time Series

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	66.9	48.6	42.3	1.22	25				
5/20/2016						34.4			
7/11/2016	41	45		3.7	27	34			
7/12/2016			44						
8/30/2016	36	42	40	6.8	23	36			
10/19/2016	46	44	43	11					
10/20/2016					19	36			
12/6/2016	59	44	43	13					
12/8/2016					20	36			
1/24/2017	46	46	48	5.7	20	37			
3/21/2017	63	46	45	1.7	23	37			
5/22/2017	77	48	46						
5/23/2017				1.5	21	38			
10/3/2017	42	47	48	1.3	21	38			
6/4/2018	71.8	47.8	46.6	4.9					
6/5/2018					22.9	38			
10/1/2018	49.1	48.1	48.6	0.59 (J)					
10/2/2018					20.3	38.5			
4/1/2019			50.4						
4/2/2019	84.3	48.7		4.9	23.8	35.5			
4/4/2019							915		
4/5/2019								392	585
9/23/2019	70.2	47.2	43.9						
9/24/2019				<1	20.7	35.4			
9/25/2019							767		
9/26/2019									556
9/27/2019								520	
3/25/2020	85.9	46.3	50.5			35.1			
3/26/2020				<1	21.6				
3/27/2020								419	
4/1/2020							889		478
6/17/2020							901		

Time Series

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	1250
4/1/2020	1210
6/17/2020	1210

Time Series

Constituent: Thallium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.001	<0.001	<0.001	<0.001	<0.001				
5/20/2016						<0.001			
7/11/2016	<0.001	<0.001		<0.001	<0.001	<0.001			
7/12/2016			<0.001						
8/30/2016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
10/19/2016	<0.001	<0.001	<0.001	<0.001					
10/20/2016					<0.001	<0.001			
12/6/2016	<0.001	<0.001	<0.001	<0.001					
12/8/2016					<0.001	<0.001			
1/24/2017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
3/21/2017	<0.001	3E-05 (J)	<0.001	<0.001	<0.001	<0.001			
5/22/2017	<0.001	<0.001	<0.001						
5/23/2017				<0.001	<0.001	<0.001			
4/2/2018	<0.001	<0.001		<0.001					
4/3/2018			<0.001		<0.001	<0.001			
6/4/2018	<0.001	<0.001	<0.001	<0.001					
6/5/2018					<0.001	<0.001			
10/1/2018	<0.001	<0.001	<0.001	<0.001					
10/2/2018					<0.001	<0.001			
3/11/2019				<0.001					
3/12/2019	<0.001	<0.001	<0.001		<0.001	<0.001			
3/14/2019									<0.001
3/15/2019							<0.001	<0.001	
4/1/2019			<0.001						
4/2/2019	<0.001	<0.001		<0.001	<0.001	<0.001			
4/4/2019							<0.001		
4/5/2019								<0.001	<0.001
9/23/2019	<0.001	<0.001	<0.001						
9/24/2019				<0.001	<0.001	<0.001			
9/25/2019							<0.001		
9/26/2019									<0.001
9/27/2019								<0.001	
3/2/2020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
3/3/2020							<0.001		
3/25/2020	<0.001	<0.001	<0.001			5.7E-05 (J)			
3/26/2020				<0.001	<0.001				
3/27/2020								<0.001	
4/1/2020							<0.001		<0.001
6/17/2020							<0.001		

Time Series

Constituent: Thallium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.00029 (J)
6/17/2020	0.00028 (J)

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	421	143	267	165	168				
5/20/2016						223			
7/11/2016	363	125		266	158	225			
7/12/2016			249						
8/30/2016	330	168	254	292	141	232			
10/19/2016	380	176	357	338					
10/20/2016					99	225			
12/6/2016	377	145	285	356					
12/8/2016					116	235			
1/24/2017	342	129	300	131	156	272			
3/21/2017	340	103	288	132	144	222			
5/22/2017	338	92	263						
5/23/2017				183	134	231			
10/3/2017	343	127	300	161	147	243			
6/4/2018	415	140	266	240					
6/5/2018					152	235			
10/1/2018	354	135	291	106					
10/2/2018					146	228			
4/1/2019			284						
4/2/2019	452	133		230	144	238			
4/4/2019							1800		
4/5/2019								890	1400
9/23/2019	442	129	268						
9/24/2019				131	133	222			
9/25/2019							1970		
9/26/2019									1400
9/27/2019								1110	
3/25/2020	496	138	284			240			
3/26/2020				69	104				
3/27/2020								1100	
4/1/2020							1940		1530
6/17/2020							2100		

Time Series

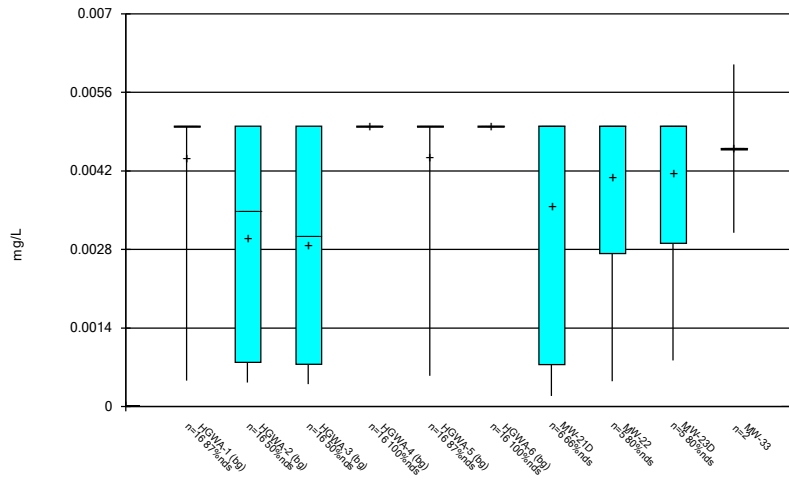
Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

1/22/2020	2310
4/1/2020	2590
6/17/2020	2540

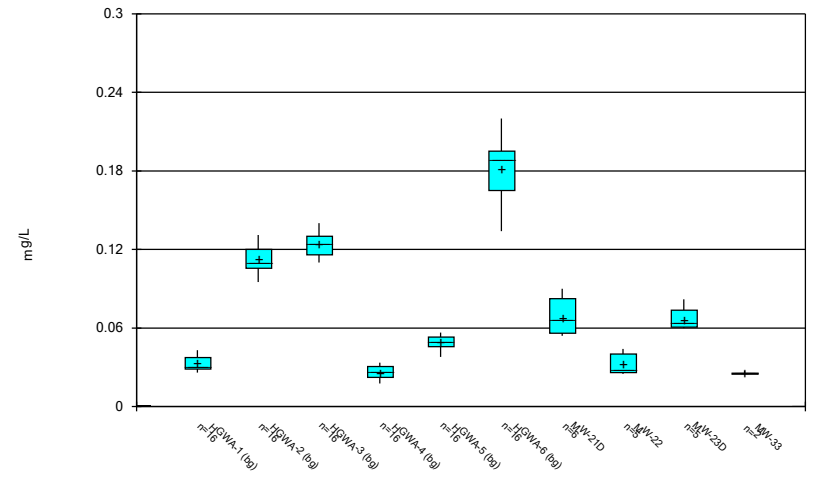
FIGURE B.

Box & Whiskers Plot



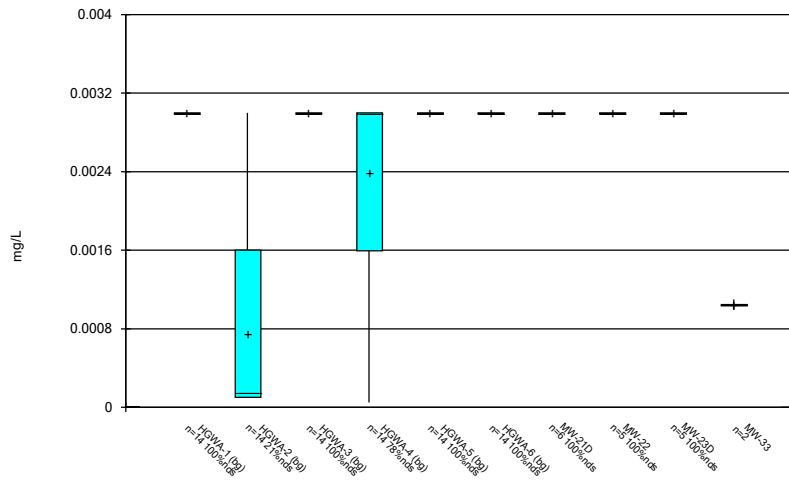
Constituent: Arsenic Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



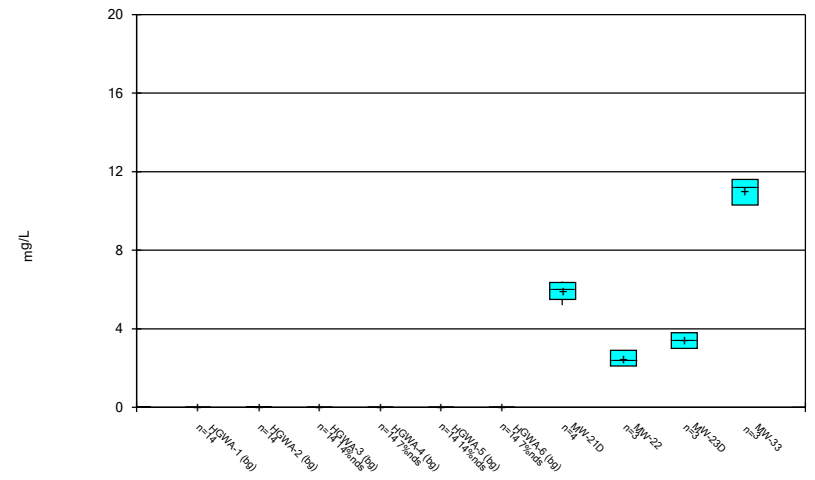
Constituent: Barium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



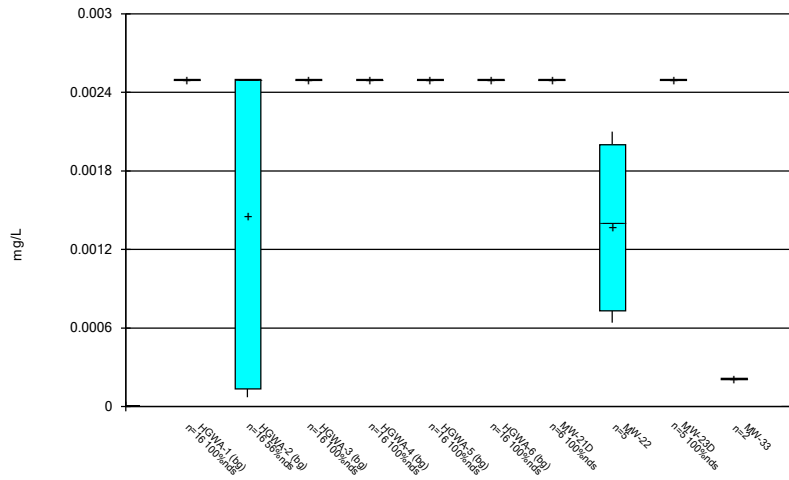
Constituent: Beryllium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



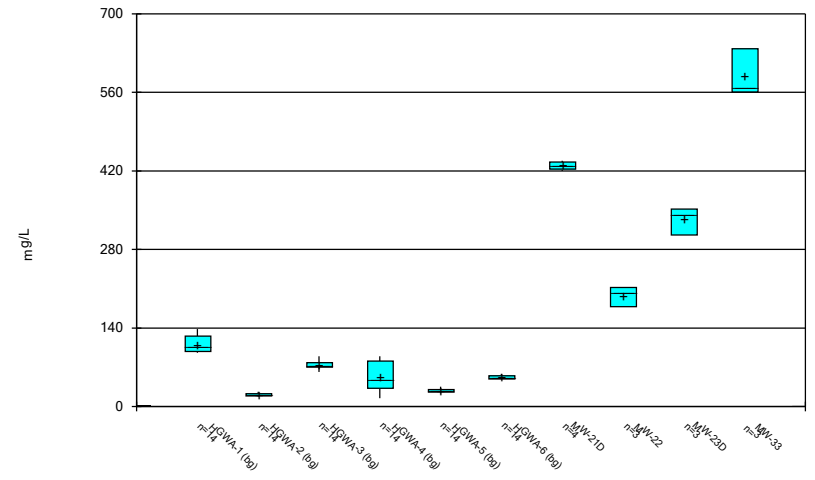
Constituent: Boron Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



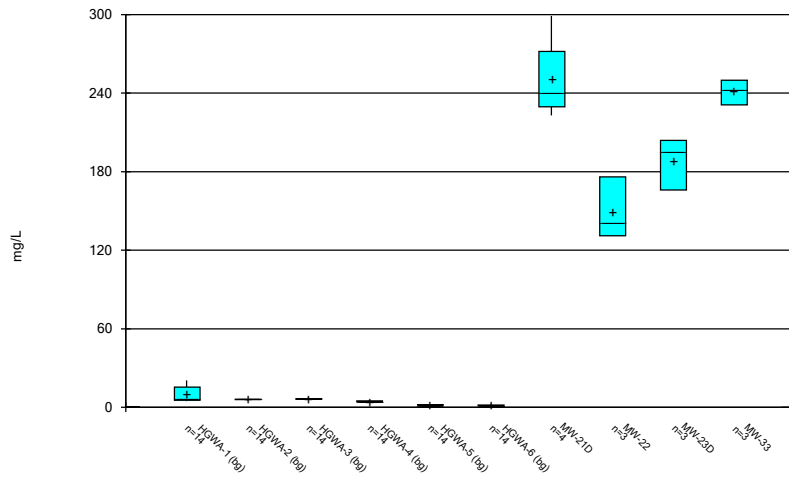
Constituent: Cadmium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



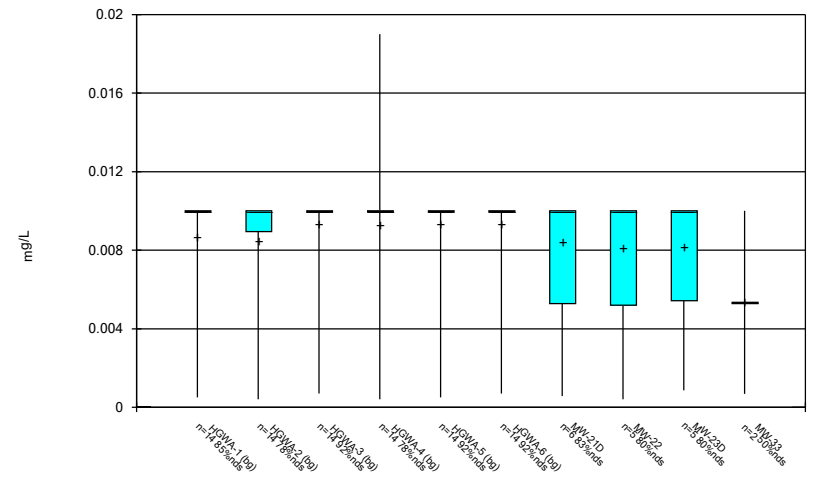
Constituent: Calcium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



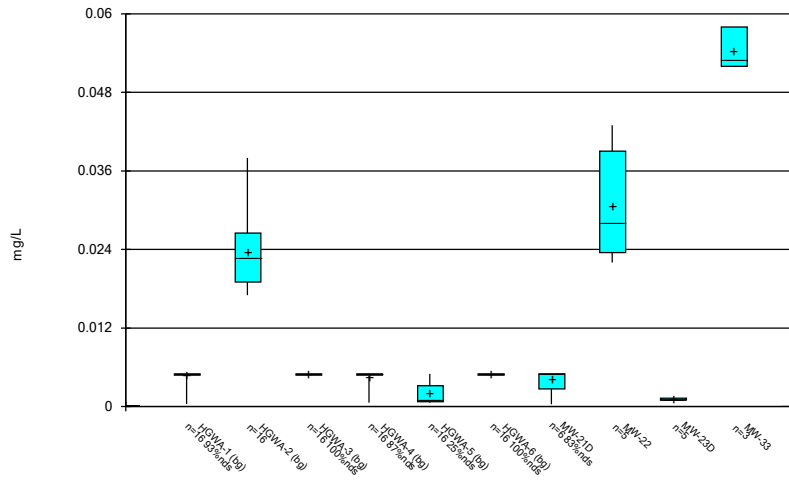
Constituent: Chloride Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



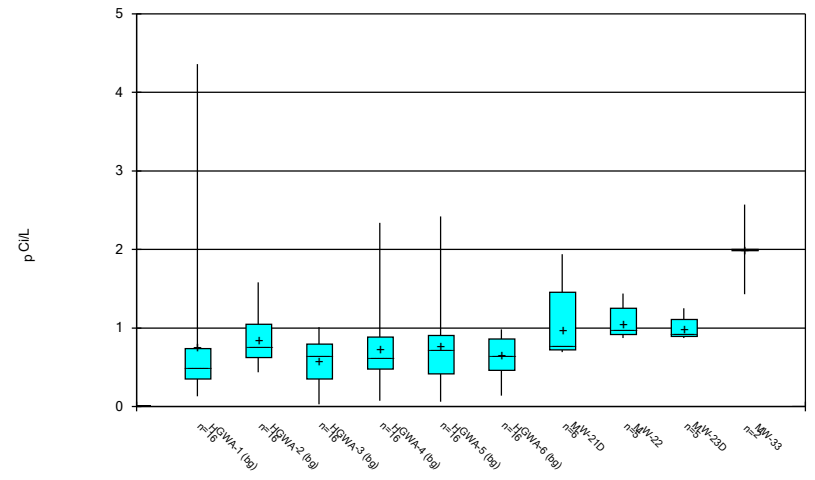
Constituent: Chromium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



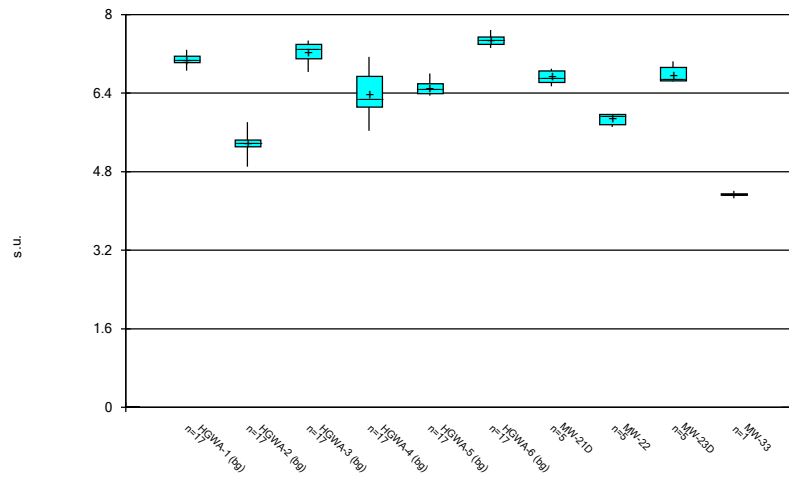
Constituent: Cobalt Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



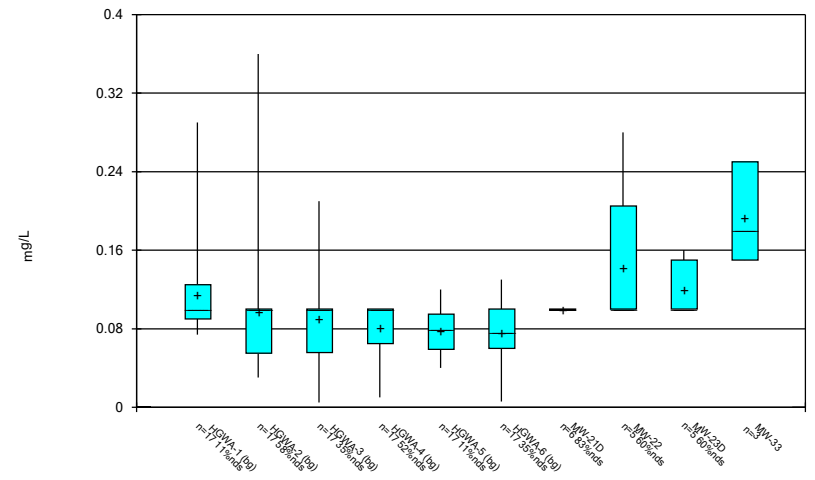
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wel
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



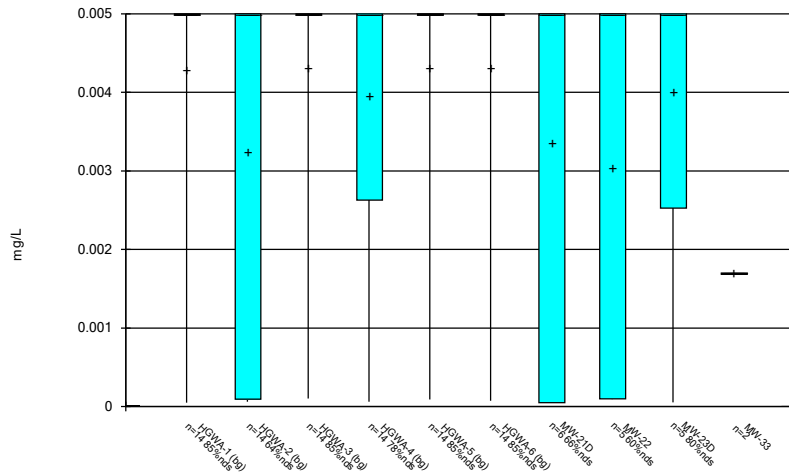
Constituent: Field pH Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



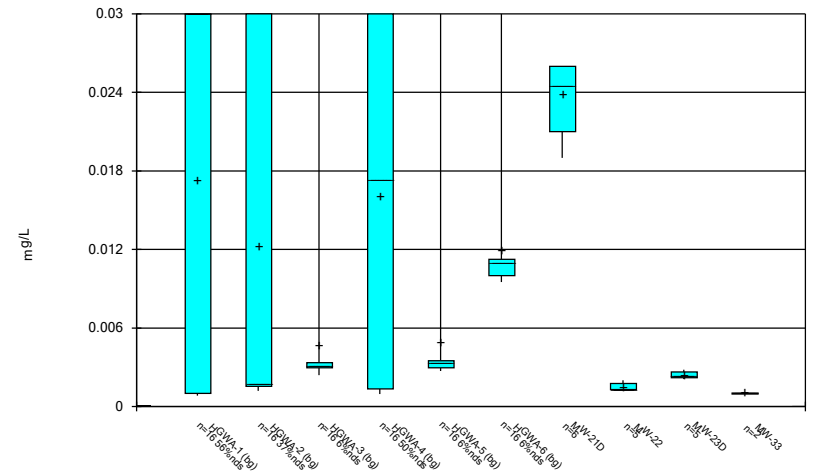
Constituent: Fluoride Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



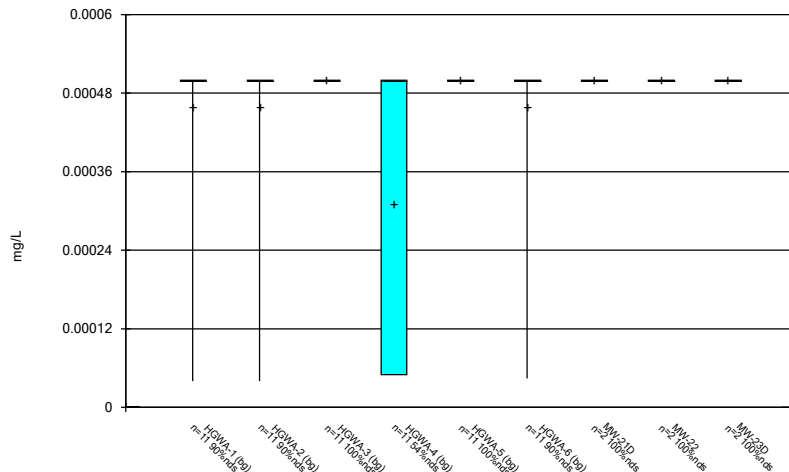
Constituent: Lead Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



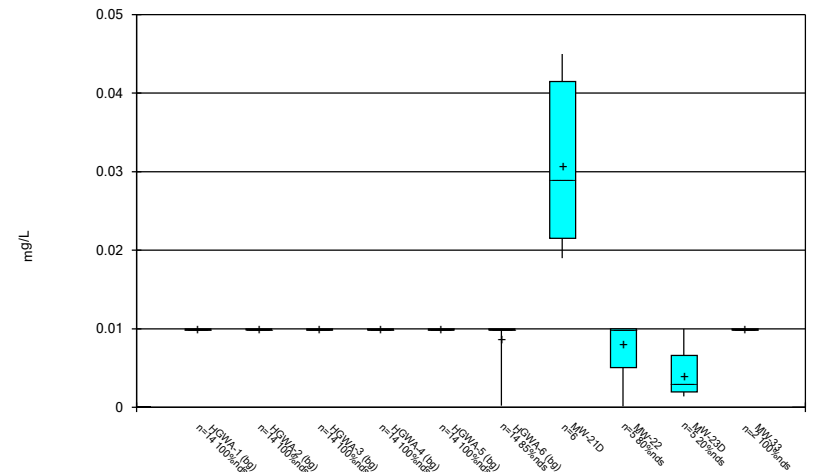
Constituent: Lithium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



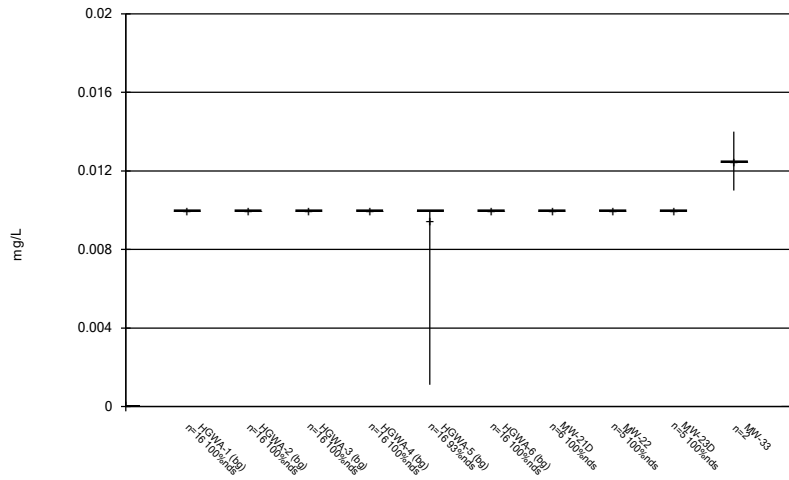
Constituent: Mercury Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



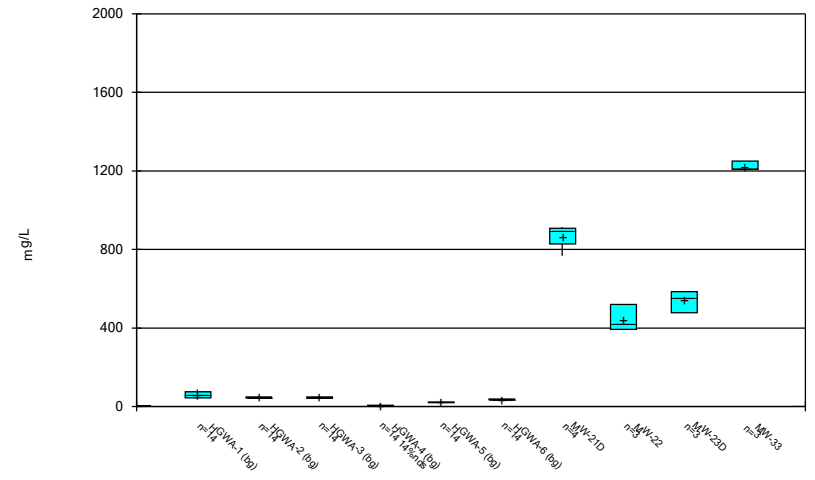
Constituent: Molybdenum Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



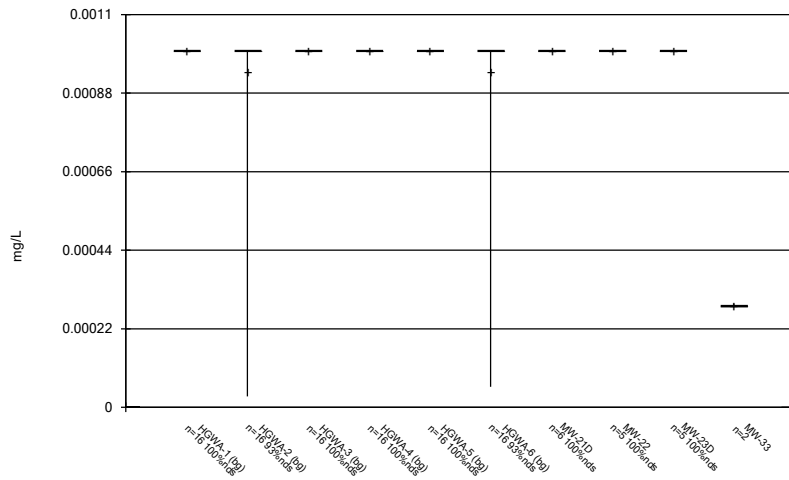
Constituent: Selenium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



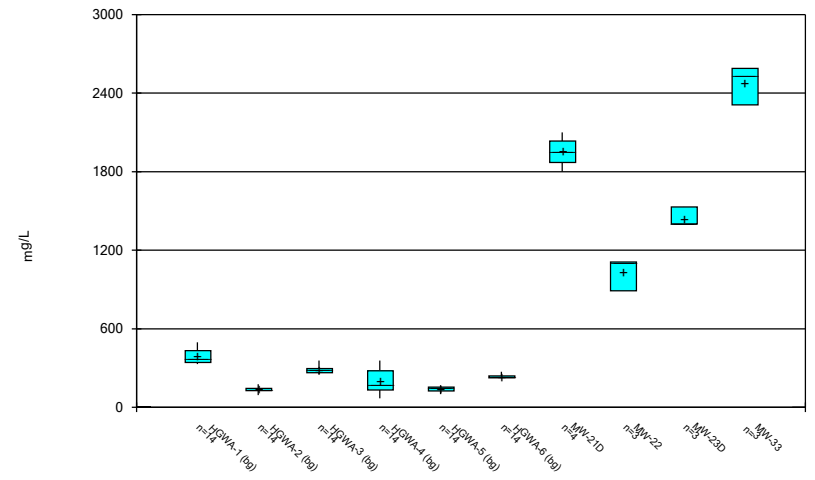
Constituent: Sulfate Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Thallium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE C.

Interwell Prediction Limit Summary (New Wells) - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:12 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MW-21D	0.04409	n/a	6/17/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-22	0.04409	n/a	3/27/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-23D	0.04409	n/a	4/1/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-33	0.04409	n/a	6/17/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-21D	128.9	n/a	6/17/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-22	128.9	n/a	3/27/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-23D	128.9	n/a	4/1/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-33	128.9	n/a	6/17/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	MW-21D	20.4	n/a	6/17/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-22	20.4	n/a	3/27/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-23D	20.4	n/a	4/1/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-33	20.4	n/a	6/17/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-33	7.69	4.9	4/1/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-21D	85.9	n/a	6/17/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-22	85.9	n/a	3/27/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-23D	85.9	n/a	4/1/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-33	85.9	n/a	6/17/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-21D	425	n/a	6/17/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-22	425	n/a	3/27/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-23D	425	n/a	4/1/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-33	425	n/a	6/17/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

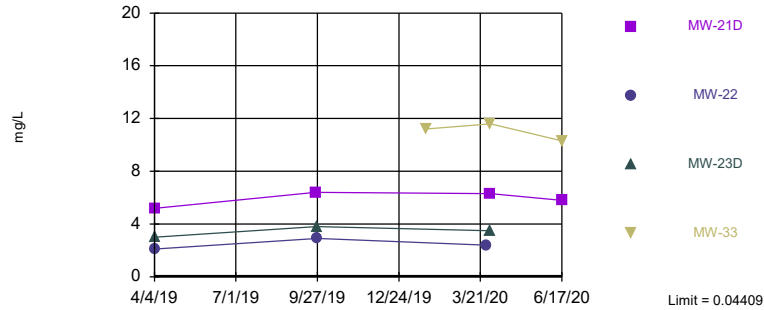
Interwell Prediction Limit Summary (New Wells) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:12 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MW-21D	0.04409	n/a	6/17/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-22	0.04409	n/a	3/27/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-23D	0.04409	n/a	4/1/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-33	0.04409	n/a	6/17/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-21D	128.9	n/a	6/17/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-22	128.9	n/a	3/27/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-23D	128.9	n/a	4/1/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-33	128.9	n/a	6/17/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	MW-21D	20.4	n/a	6/17/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-22	20.4	n/a	3/27/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-23D	20.4	n/a	4/1/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-33	20.4	n/a	6/17/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-21D	7.69	4.9	4/1/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-22	7.69	4.9	3/27/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-23D	7.69	4.9	4/1/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-33	7.69	4.9	4/1/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-21D	0.36	n/a	6/17/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-22	0.36	n/a	3/27/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-23D	0.36	n/a	4/1/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-33	0.36	n/a	6/17/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-21D	85.9	n/a	6/17/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-22	85.9	n/a	3/27/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-23D	85.9	n/a	4/1/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-33	85.9	n/a	6/17/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-21D	425	n/a	6/17/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-22	425	n/a	3/27/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-23D	425	n/a	4/1/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-33	425	n/a	6/17/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
Interwell Parametric

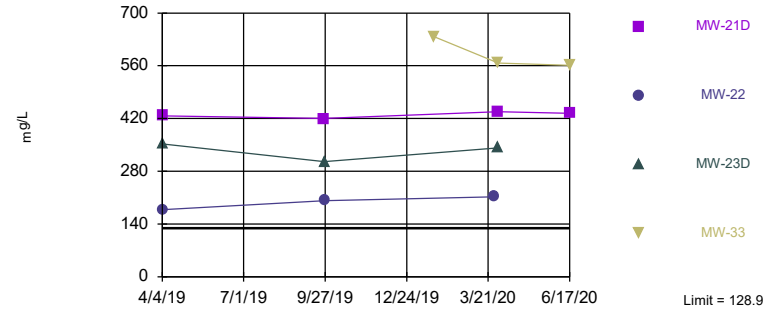


Background Data Summary (based on natural log transformation): Mean=-4.169, Std. Dev.=0.5776, n=84, 7.143% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.974, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 4 points to limit. Assumes 1 future value.

Constituent: Boron Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
Interwell Parametric

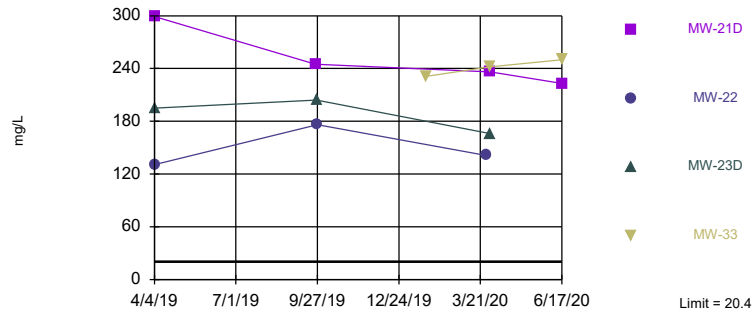


Background Data Summary (based on cube root transformation): Mean=3.704, Std. Dev.=0.743, n=84. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9612, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 4 points to limit. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
Interwell Non-parametric

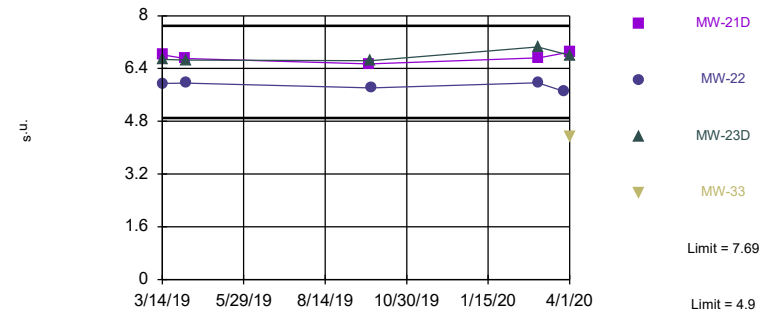


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. Annual per-constituent alpha = 0.002742. Individual comparison alpha = 0.0002746 (1 of 2). Comparing 4 points to limit. Assumes 1 future value.

Constituent: Chloride Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limits: MW-33

Prediction Limit
Interwell Non-parametric

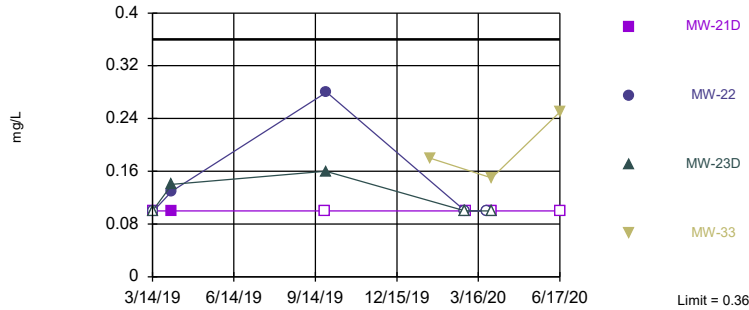


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 102 background values. Annual per-constituent alpha = 0.003748. Individual comparison alpha = 0.0003751 (1 of 2). Comparing 4 points to limit. Assumes 1 future value.

Constituent: Field pH Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Within Limit

Prediction Limit
 Interwell Non-parametric

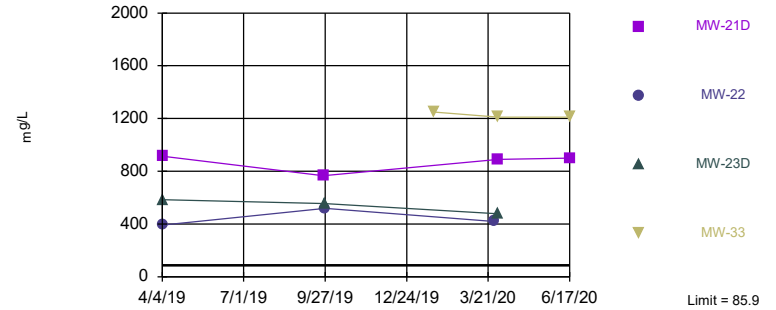


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 102 background values. 34.31% NDs. Annual per-constituent alpha = 0.001874. Individual comparison alpha = 0.0001875 (1 of 2). Comparing 4 points to limit. Assumes 1 future value.

Constituent: Fluoride Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
 Interwell Non-parametric

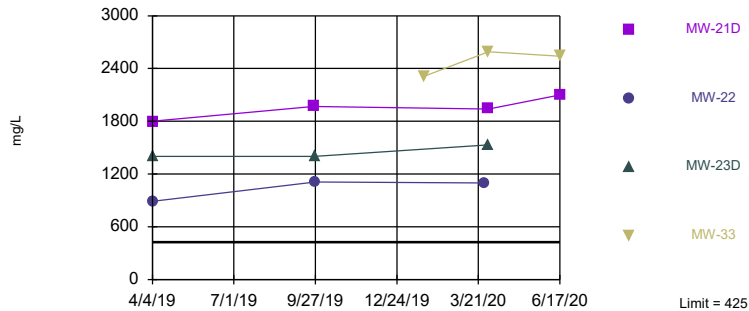


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. 2.381% NDs. Annual per-constituent alpha = 0.002742. Individual comparison alpha = 0.0002746 (1 of 2). Comparing 4 points to limit. Assumes 1 future value.

Constituent: Sulfate Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
 Interwell Parametric



Background Data Summary (based on square root transformation): Mean=14.8, Std. Dev.=3.207, n=84. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9706, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 4 points to limit. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	0.0214 (J)	<0.04	<0.04	0.0321 (J)	<0.04				
5/20/2016						0.0363 (J)			
7/11/2016	0.0142 (J)		0.0052 (J)	0.0337 (J)	0.0175 (J)	0.0179 (J)			
7/12/2016		0.0074 (J)							
8/30/2016	0.0074 (J)	<0.04	0.0068 (J)	0.0173 (J)	0.0072 (J)	0.014 (J)			
10/19/2016	0.0224 (J)	0.0085 (J)		0.0341 (J)	0.018 (J)				
10/20/2016			0.0135 (J)			0.0197 (J)			
12/6/2016	0.0211 (J)	0.0085 (J)		0.0326 (J)	0.0158 (J)				
12/8/2016			0.0083 (J)			0.0159 (J)			
1/24/2017	0.0165 (J)	0.01 (J)	0.0072 (J)	0.0365 (J)	0.0145 (J)	<0.04			
3/21/2017	0.0187 (J)	0.0079 (J)	<0.04	0.0349 (J)	0.0101 (J)	0.0166 (J)			
5/22/2017	0.0782	0.0131 (J)		0.0475					
5/23/2017			0.0095 (J)		0.0159 (J)	0.0167 (J)			
10/3/2017	0.0198 (J)	0.0097 (J)	0.0071 (J)	0.0386 (J)	0.0162 (J)	0.017 (J)			
6/4/2018	0.02 (J)	0.017 (J)		0.036 (J)	0.014 (J)				
6/5/2018			0.0066 (J)			0.016 (J)			
10/1/2018	0.013 (J)	0.0061 (J)		0.035 (J)	0.0093 (J)				
10/2/2018			0.0081 (J)			0.014 (J)			
4/1/2019		0.0066 (J)							
4/2/2019	0.016 (J)		0.0052 (J)	0.034 (J)	0.01 (J)	0.013 (J)			
4/4/2019							5.2		
4/5/2019								3	2.1
9/23/2019	0.021 (J)	0.0081 (J)		0.04 (J)					
9/24/2019			0.0088 (J)		0.013 (J)	0.016 (J)			
9/25/2019							6.4		
9/26/2019								3.8	
9/27/2019									2.9
1/22/2020									
3/25/2020	0.025 (J)	0.0096 (J)		0.039 (J)		0.021 (J)			
3/26/2020			0.0072 (J)		0.012 (J)				
3/27/2020									2.4
4/1/2020							6.3	3.5	
6/17/2020							5.8		

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	11.2
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	11.6
6/17/2020	10.3

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	138	76.2	35.5	22.9	48.4				
5/20/2016						56.1			
7/11/2016	97.2		35.4	22.3	73	49.3			
7/12/2016		61.5							
8/30/2016	97.5	65.1	28	26.4	85.7	53.9			
10/19/2016	99.2	73.2		21.7	89.7				
10/20/2016			26.7			50.7			
12/6/2016	105	74.9		18.2	80				
12/8/2016			23.5			49.2			
1/24/2017	95.7	69.6	24.5	18.5	30.8	48.3			
3/21/2017	106	75.7	30.8	18.6	34	51.3			
5/22/2017	107	71.5		17.8					
5/23/2017			24.2		43	49.1			
10/3/2017	102	76.3	29	20.2	46.9	55.1			
6/4/2018	124	73.4		19.1	81.9				
6/5/2018			27.8			54.5			
10/1/2018	108	80.9		20.5 (J)	22 (J)				
10/2/2018			28.9			54.7			
4/1/2019		80.5							
4/2/2019	132		26.3	22.5 (J)	76	49.7			
4/4/2019							427		
4/5/2019								352	178
9/23/2019	118	71		19.5					
9/24/2019			29.3		36.6	52.5			
9/25/2019							420		
9/26/2019								306	
9/27/2019									202
1/22/2020									
3/25/2020	127	89.8		23		58.1			
3/26/2020			27.8		14.9				
3/27/2020									212
4/1/2020							438	342	
6/17/2020							434		

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	638
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	567
6/17/2020	561

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	9.94	5.93	1.57	6.14	4.56				
5/20/2016						1.35			
7/11/2016	6.3		2	5.9	5	1.7			
7/12/2016		6.2							
8/30/2016	6	6.4	2	6.2	4.9	1.6			
10/19/2016	5.8	6.5		6.1	4.6				
10/20/2016			2.2			1.6			
12/6/2016	5.4	7.2		6	4.5				
12/8/2016			2			1.6			
1/24/2017	5.2	6.4	1.6	6.1	4.7	1.9			
3/21/2017	4.6	7.5	2	5.9	4.3	1.3			
5/22/2017	4.6	6.5		5.9					
5/23/2017			1.7		4.5	1.2			
10/3/2017	5.6	6.5	1.7	6.3	4.8	2.1			
6/4/2018	13.1	6.3		6.1	4.5				
6/5/2018			1.6			1.2			
10/1/2018	6.6	6.4		6.4	3.8				
10/2/2018			2.4			1.7			
4/1/2019		6.5							
4/2/2019	20.3		1.7	5.8	4.4	1.6			
4/4/2019							299		
4/5/2019								195	131
9/23/2019	17.7	5.9		5.1					
9/24/2019			1.7		3.6	1.3			
9/25/2019							245		
9/26/2019								204	
9/27/2019									176
1/22/2020									
3/25/2020	20.4	6.1		5.2		1.2			
3/26/2020			1.4		3.4				
3/27/2020									141
4/1/2020							236	166	
6/17/2020							223		

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	231
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	242
6/17/2020	250

Prediction Limit

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-23D	MW-21D	MW-22
5/19/2016	7.27	7.45	6.62	5.81	6.51				
5/20/2016						7.58			
7/11/2016	7.06		6.54	5.68	6.65	7.32			
7/12/2016		7.32							
8/30/2016	7.28	7.43	6.38	5.63	7.14	7.69			
10/19/2016	7.02	7.03		5.46	7.08				
10/20/2016			6.52			7.43			
12/6/2016	7.09	7.08		5.38	7				
12/8/2016			6.5			7.56			
1/24/2017	7.2	7.39	6.59	5.37	6.16	7.52			
3/21/2017	7.01	6.83	6.55	4.9	6.07	7.4			
5/22/2017	7.11	7.02		5.2					
5/23/2017			6.5		6.28	7.53			
10/3/2017	7.21	7.47	6.63	5.3	6.45	7.51			
4/2/2018	7.1			5.4	6.23				
4/3/2018		7.38	6.59			7.53			
6/4/2018	7.06	7.38		5.27	6.82				
6/5/2018			6.44			7.37			
10/1/2018	7.09	7.13		5.31	5.73				
10/2/2018			6.35			7.36			
3/11/2019					6.27				
3/12/2019	7.03	7.29	6.42	5.42		7.5			
3/14/2019							6.68		
3/15/2019								6.81	5.95
4/1/2019		7.16							
4/2/2019	6.86		6.38	5.41	6.66	7.46			
4/4/2019								6.7	
4/5/2019							6.66		5.96
9/23/2019	7.02	7.3		5.33					
9/24/2019			6.4		6.16	7.41			
9/25/2019								6.54	
9/26/2019							6.64		
9/27/2019									5.81
3/2/2020	7.1	7.12	6.8	5.43	5.63	7.67	7.05		5.97
3/3/2020								6.72	
3/25/2020	6.95	7.4		5.36		7.39			
3/26/2020			6.38		5.77				
3/27/2020									5.71
4/1/2020							6.8	6.9	

Prediction Limit

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016
5/20/2016
7/11/2016
7/12/2016
8/30/2016
10/19/2016
10/20/2016
12/6/2016
12/8/2016
1/24/2017
3/21/2017
5/22/2017
5/23/2017
10/3/2017
4/2/2018
4/3/2018
6/4/2018
6/5/2018
10/1/2018
10/2/2018
3/11/2019
3/12/2019
3/14/2019
3/15/2019
4/1/2019
4/2/2019
4/4/2019
4/5/2019
9/23/2019
9/24/2019
9/25/2019
9/26/2019
9/27/2019
3/2/2020
3/3/2020
3/25/2020
3/26/2020
3/27/2020
4/1/2020

4.35

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
4/2/2018	
4/3/2018	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
3/11/2019	
3/12/2019	
3/14/2019	
3/15/2019	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	0.18 (J)
3/2/2020	
3/3/2020	
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	0.15 (J)
6/17/2020	0.25

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	66.9	42.3	25	48.6	1.22				
5/20/2016						34.4			
7/11/2016	41		27	45	3.7	34			
7/12/2016		44							
8/30/2016	36	40	23	42	6.8	36			
10/19/2016	46	43		44	11				
10/20/2016			19			36			
12/6/2016	59	43		44	13				
12/8/2016			20			36			
1/24/2017	46	48	20	46	5.7	37			
3/21/2017	63	45	23	46	1.7	37			
5/22/2017	77	46		48					
5/23/2017			21		1.5	38			
10/3/2017	42	48	21	47	1.3	38			
6/4/2018	71.8	46.6		47.8	4.9				
6/5/2018			22.9			38			
10/1/2018	49.1	48.6		48.1	0.59 (J)				
10/2/2018			20.3			38.5			
4/1/2019		50.4							
4/2/2019	84.3		23.8	48.7	4.9	35.5			
4/4/2019							915		
4/5/2019								585	392
9/23/2019	70.2	43.9		47.2					
9/24/2019			20.7		<1	35.4			
9/25/2019							767		
9/26/2019								556	
9/27/2019									520
1/22/2020									
3/25/2020	85.9	50.5		46.3		35.1			
3/26/2020			21.6		<1				
3/27/2020									419
4/1/2020							889	478	
6/17/2020							901		

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	1250
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	1210
6/17/2020	1210

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	421	267	168	143	165				
5/20/2016						223			
7/11/2016	363		158	125	266	225			
7/12/2016		249							
8/30/2016	330	254	141	168	292	232			
10/19/2016	380	357		176	338				
10/20/2016			99			225			
12/6/2016	377	285		145	356				
12/8/2016			116			235			
1/24/2017	342	300	156	129	131	272			
3/21/2017	340	288	144	103	132	222			
5/22/2017	338	263		92					
5/23/2017			134		183	231			
10/3/2017	343	300	147	127	161	243			
6/4/2018	415	266		140	240				
6/5/2018			152			235			
10/1/2018	354	291		135	106				
10/2/2018			146			228			
4/1/2019		284							
4/2/2019	452		144	133	230	238			
4/4/2019							1800		
4/5/2019								1400	890
9/23/2019	442	268		129					
9/24/2019			133		131	222			
9/25/2019							1970		
9/26/2019								1400	
9/27/2019									1110
1/22/2020									
3/25/2020	496	284		138		240			
3/26/2020			104		69				
3/27/2020									1100
4/1/2020							1940	1530	
6/17/2020							2100		

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	2310
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	2590
6/17/2020	2540

FIGURE D.

Trend Test Summary (New Wells) - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:15 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP

Trend Test Summary (New Wells) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:15 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	0.0007668	9	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-2 (bg)	0.001791	45	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-3 (bg)	-0.0007135	-19	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-4 (bg)	-0.001746	-37	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-5 (bg)	-0.0004406	-14	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-6 (bg)	-0.001046	-21	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	MW-21D	0.1523	0	8	No	4	0	n/a	n/a	0.01	NP
Boron (mg/L)	MW-22	0.3067	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Boron (mg/L)	MW-23D	0.5041	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Boron (mg/L)	MW-33	-2.235	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Calcium (mg/L)	HGWA-1 (bg)	6.687	43	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-2 (bg)	-0.1393	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-3 (bg)	3.531	39	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-4 (bg)	-7.131	-29	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-5 (bg)	-0.6566	-14	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-6 (bg)	0.6134	15	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-21D	8.434	2	8	No	4	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-22	34.76	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Calcium (mg/L)	MW-23D	-10.08	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Calcium (mg/L)	MW-33	-191.2	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Chloride (mg/L)	HGWA-1 (bg)	1.469	22	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-2 (bg)	-0.1372	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-3 (bg)	0	-4	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-5 (bg)	-0.09359	-18	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-6 (bg)	-0.05984	-20	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-21D	-62.33	-6	-8	No	4	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-22	10.22	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Chloride (mg/L)	MW-23D	-29.24	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Chloride (mg/L)	MW-33	47.18	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Field pH (s.u.)	HGWA-1 (bg)	-0.04693	-50	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-2 (bg)	-0.054	-32	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-3 (bg)	-0.009832	-11	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.2248	-59	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-5 (bg)	-0.04139	-35	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-6 (bg)	-0.02795	-29	-63	No	17	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-1 (bg)	8.572	44	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-2 (bg)	1.136	35	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-4 (bg)	-0.7339	-37	-48	No	14	14.29	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-5 (bg)	-0.1282	-8	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-6 (bg)	0.5503	22	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-21D	22.63	0	8	No	4	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-22	27.61	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Sulfate (mg/L)	MW-23D	-107.9	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Sulfate (mg/L)	MW-33	-99.32	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	19.47	27	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-3.376	-14	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	2.137	9	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-4 (bg)	-29.52	-34	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-5 (bg)	-5.489	-26	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-6 (bg)	2.317	20	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	MW-21D	213.6	4	8	No	4	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	MW-22	214.7	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Total Dissolved Solids (mg/L)	MW-23D	131.1	NaN	NaN	No	3	0	n/a	n/a	NaN	NP

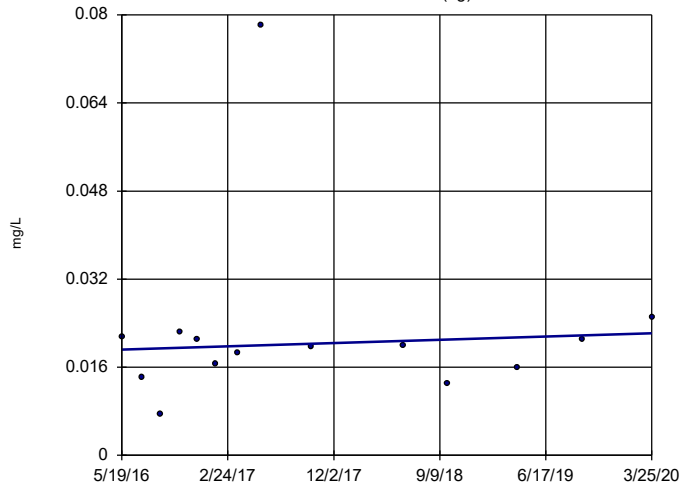
Trend Test Summary (New Wells) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:15 AM

<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>
Total Dissolved Solids (mg/L)	MW-33	571.1	NaN	NaN	No	3	0	n/a	n/a	NaN	NP

Sen's Slope Estimator

HGWA-1 (bg)

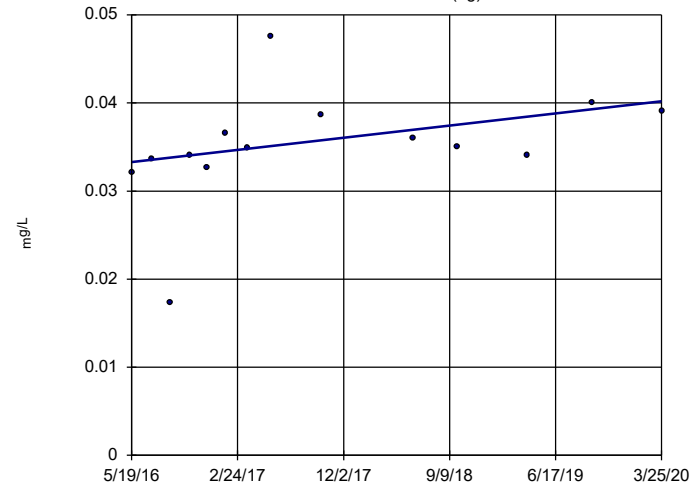


n = 14
 Slope = 0.0007668
 units per year.
 Mann-Kendall
 statistic = 9
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-2 (bg)

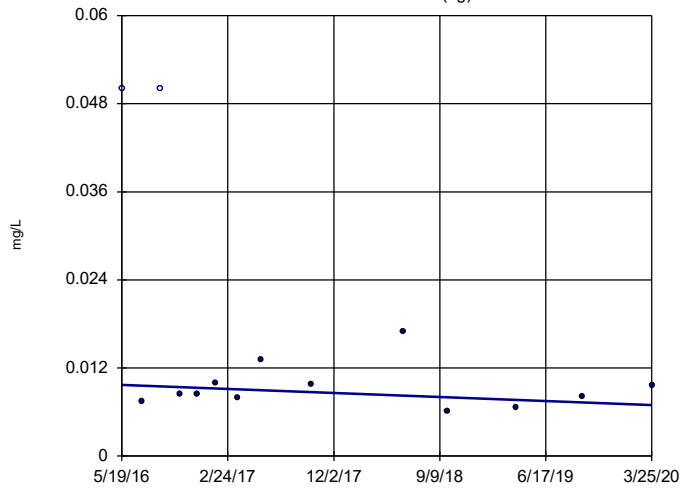


n = 14
 Slope = 0.001791
 units per year.
 Mann-Kendall
 statistic = 45
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

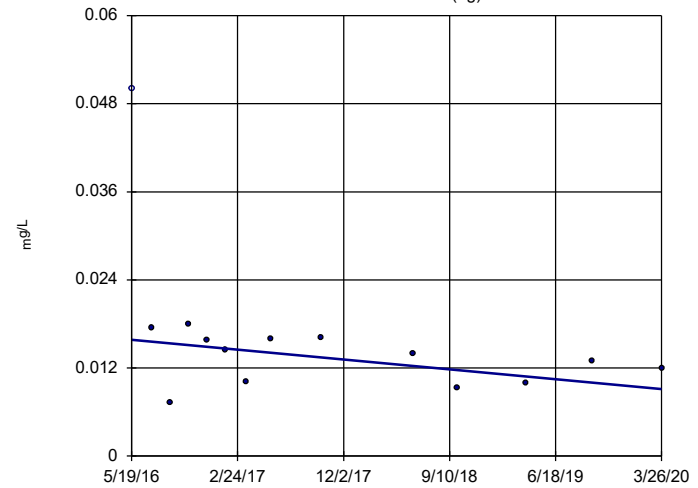


n = 14
 Slope = -0.0007135
 units per year.
 Mann-Kendall
 statistic = -19
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-4 (bg)

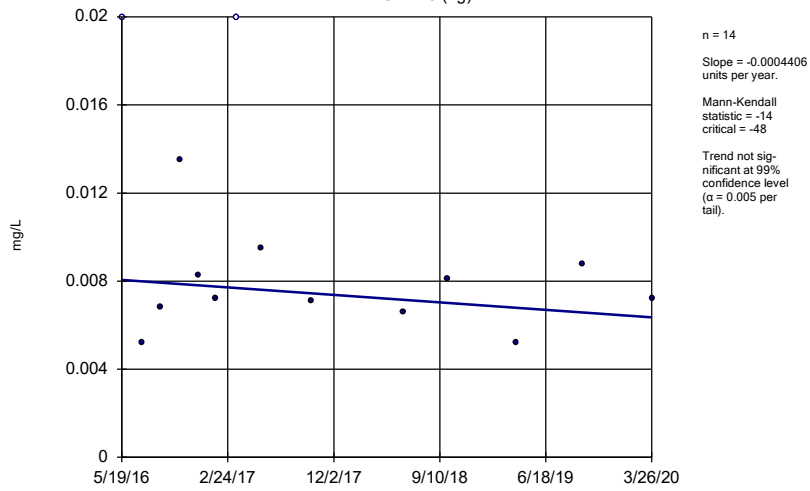


n = 14
 Slope = -0.001746
 units per year.
 Mann-Kendall
 statistic = -37
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

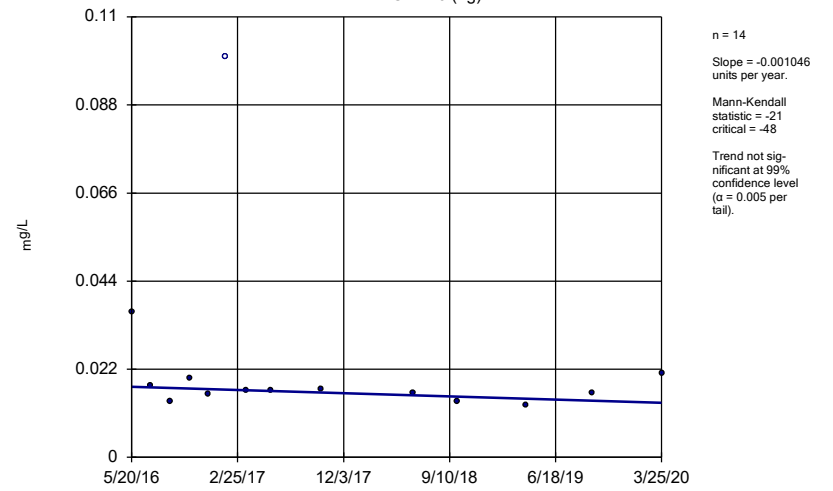
HGWA-5 (bg)



Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

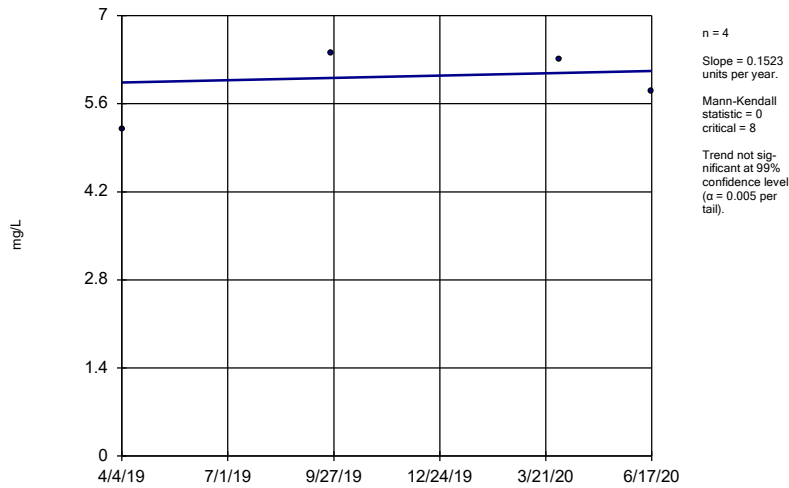
HGWA-6 (bg)



Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

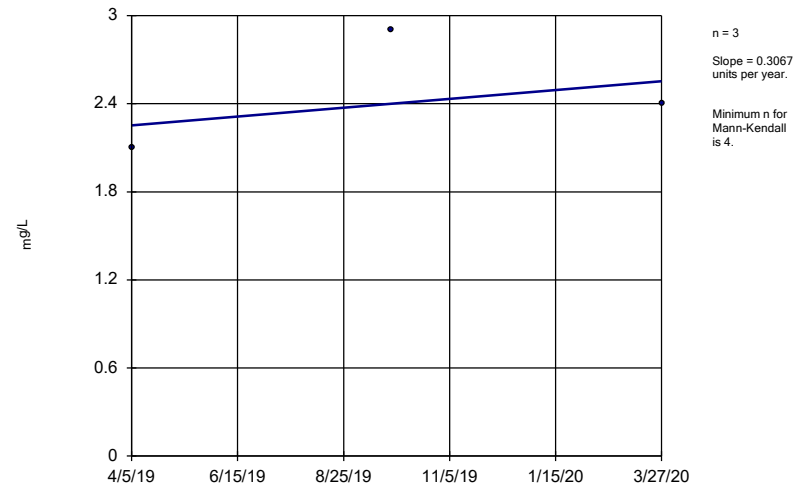
MW-21D



Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

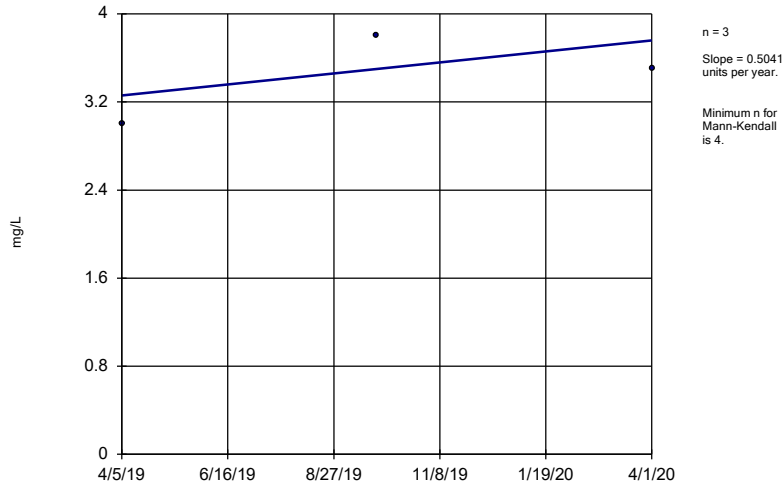
Sen's Slope Estimator

MW-22



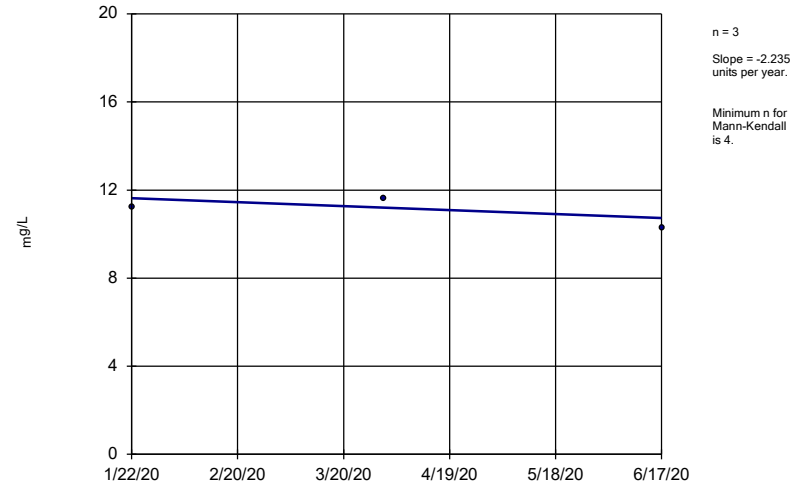
Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator MW-23D



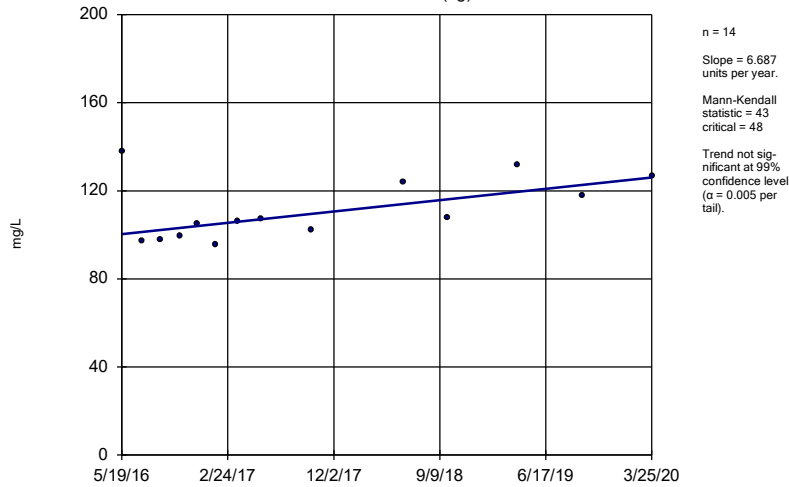
Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator MW-33



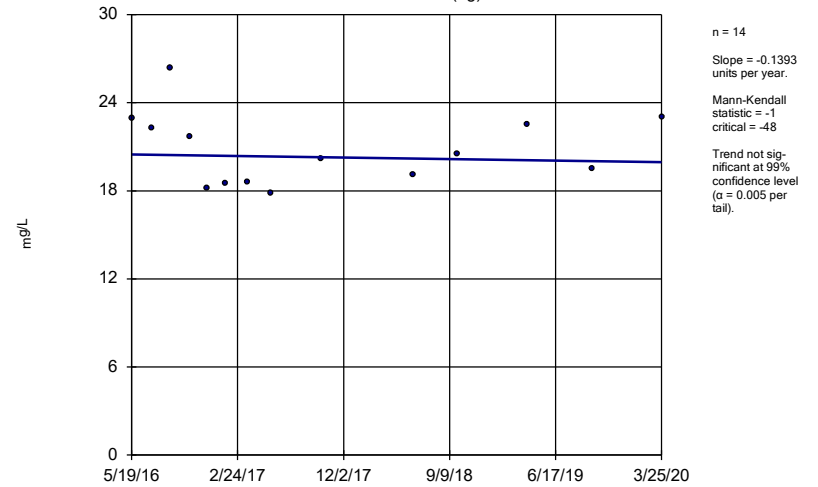
Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWA-1 (bg)



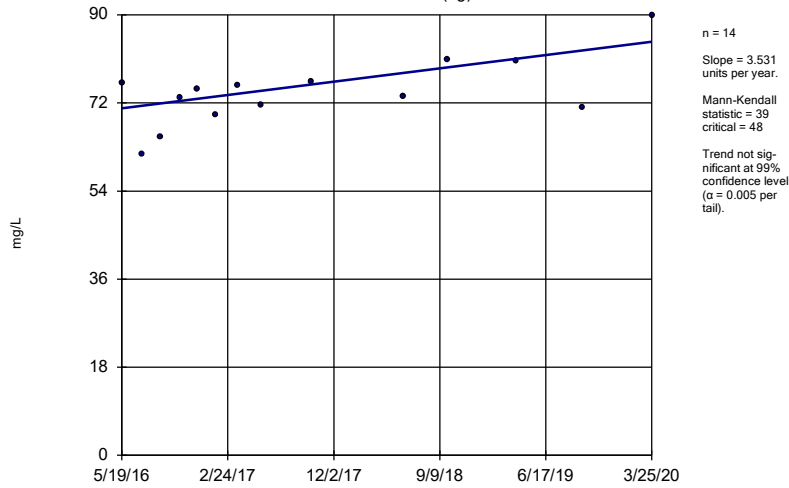
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWA-2 (bg)



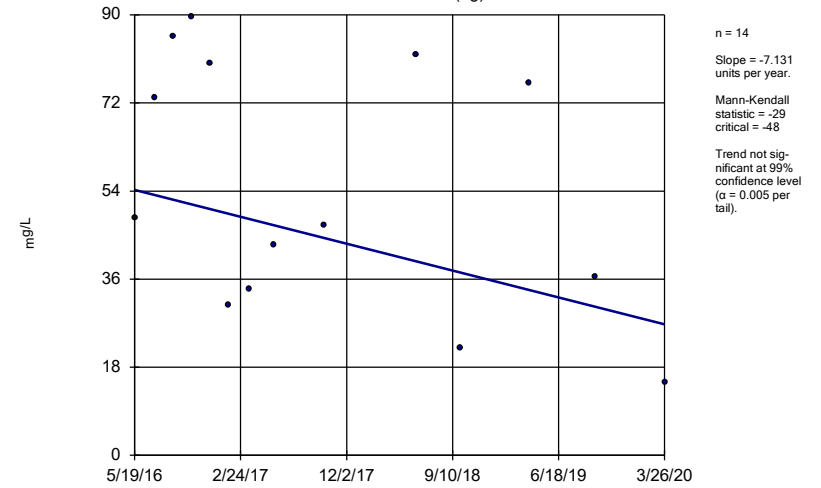
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWA-3 (bg)



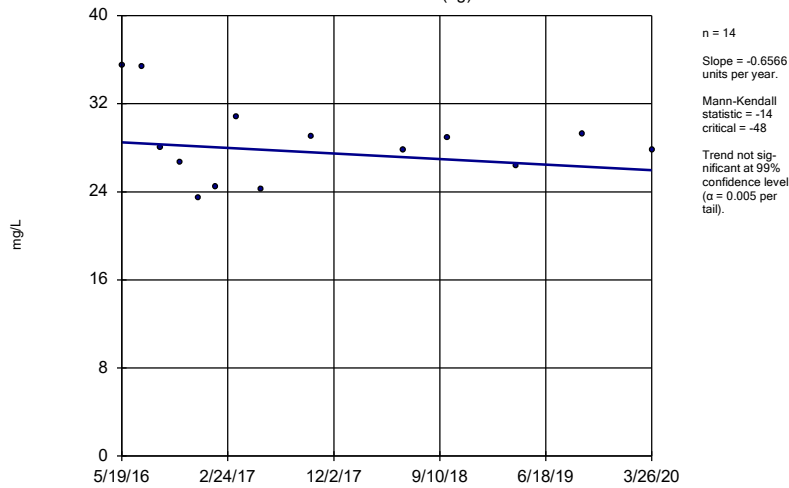
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWA-4 (bg)



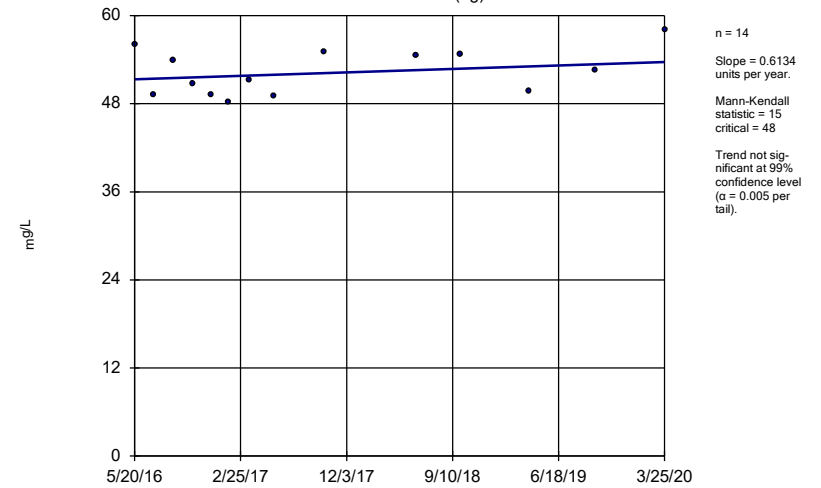
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWA-5 (bg)



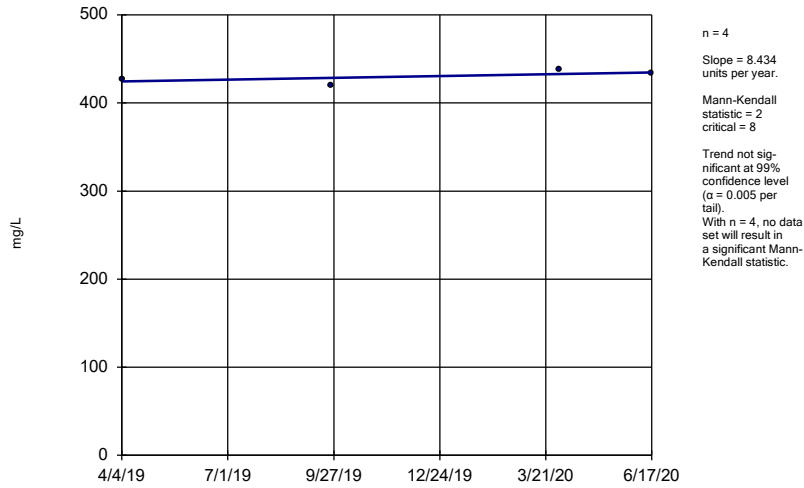
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWA-6 (bg)



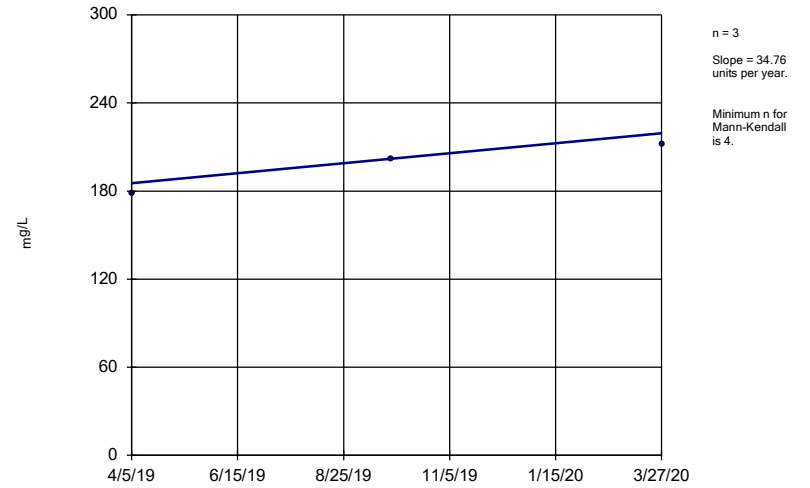
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-21D



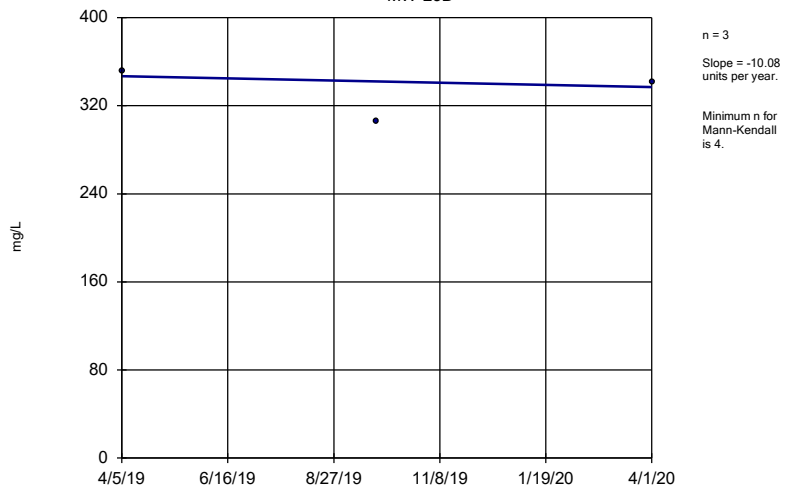
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-22



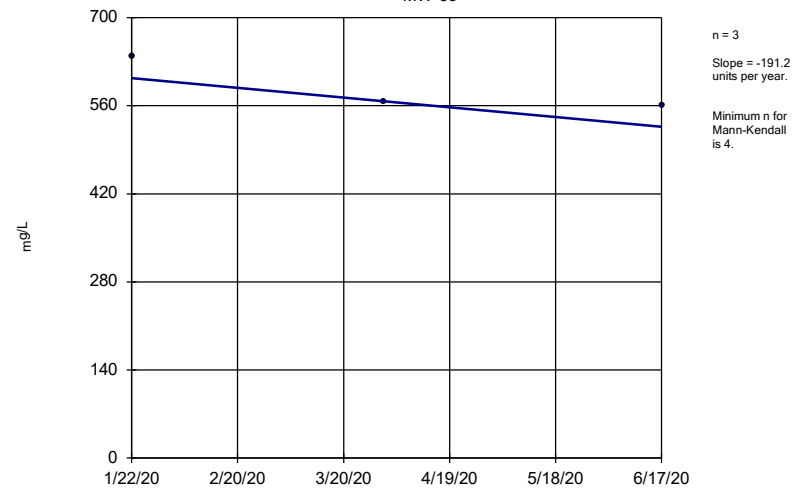
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-23D



Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

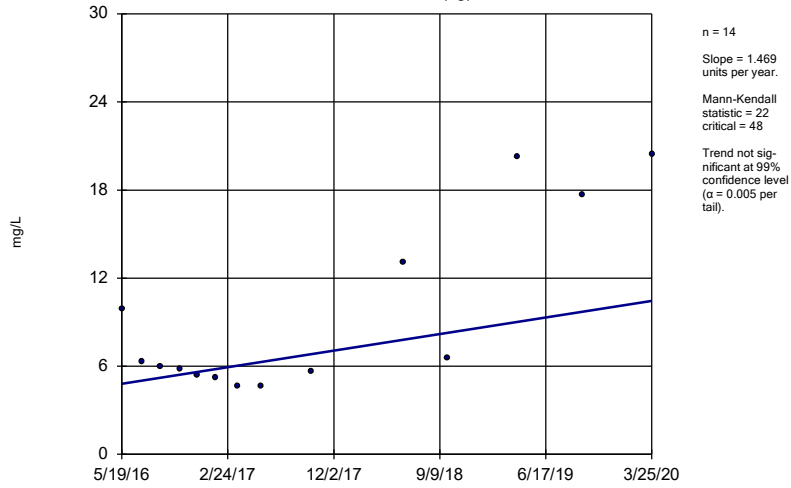
Sen's Slope Estimator
MW-33



Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

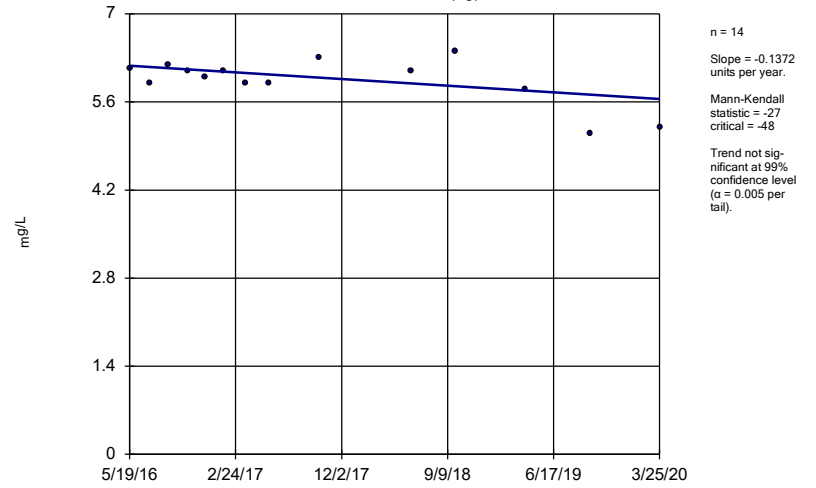
HGWA-1 (bg)



Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

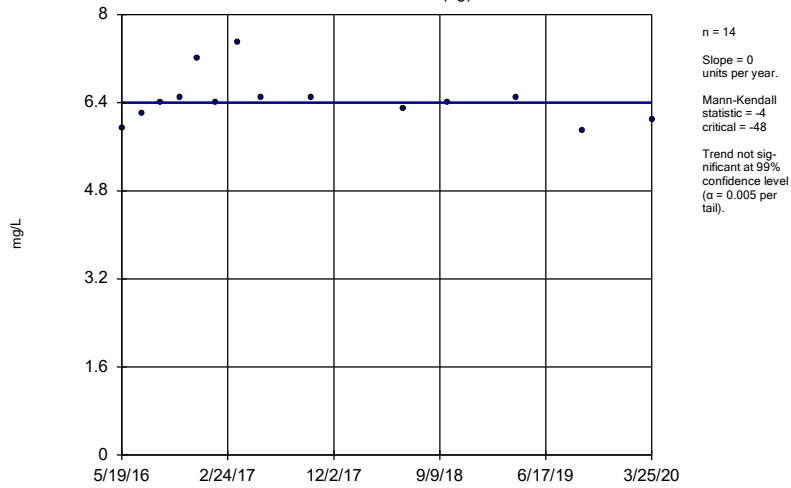
HGWA-2 (bg)



Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

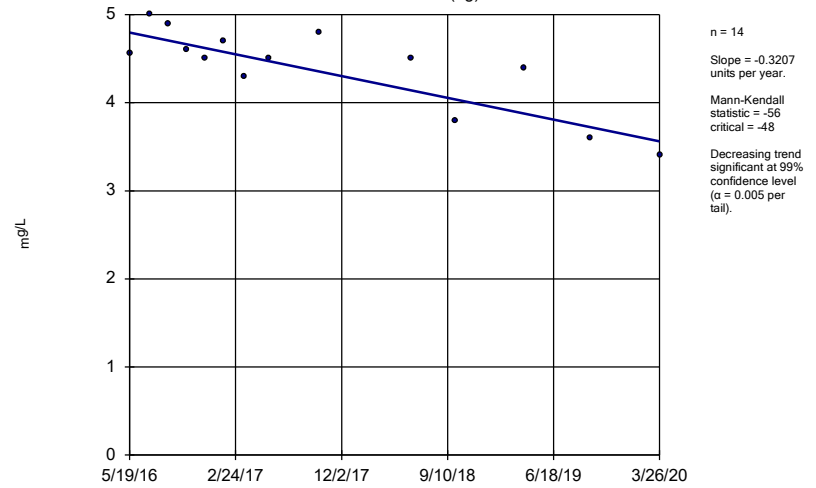
HGWA-3 (bg)



Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

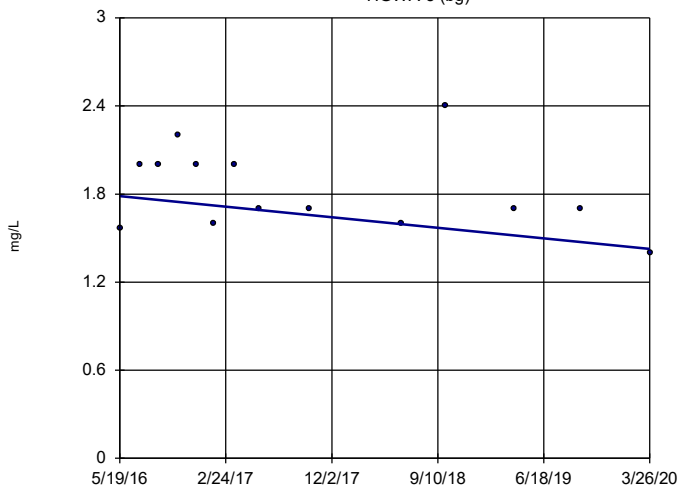
HGWA-4 (bg)



Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-5 (bg)

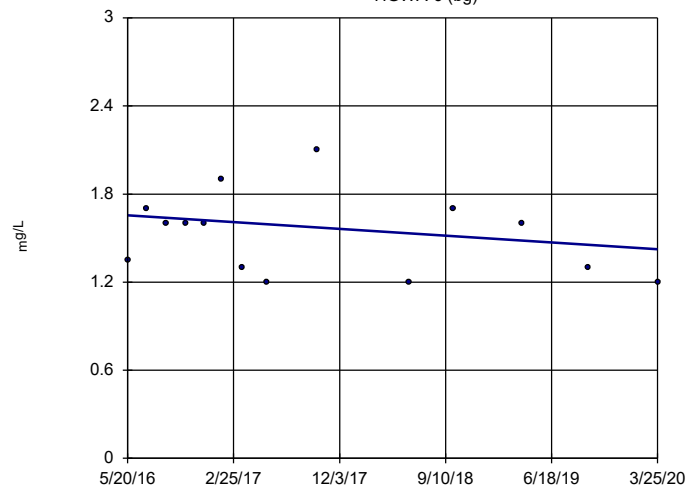


n = 14
Slope = -0.09359
units per year.
Mann-Kendall
statistic = -18
critical = -48
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-6 (bg)

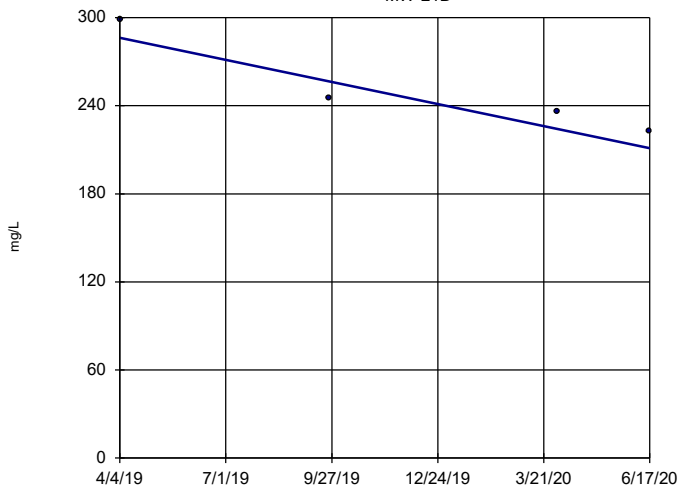


n = 14
Slope = -0.05984
units per year.
Mann-Kendall
statistic = -20
critical = -48
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

MW-21D

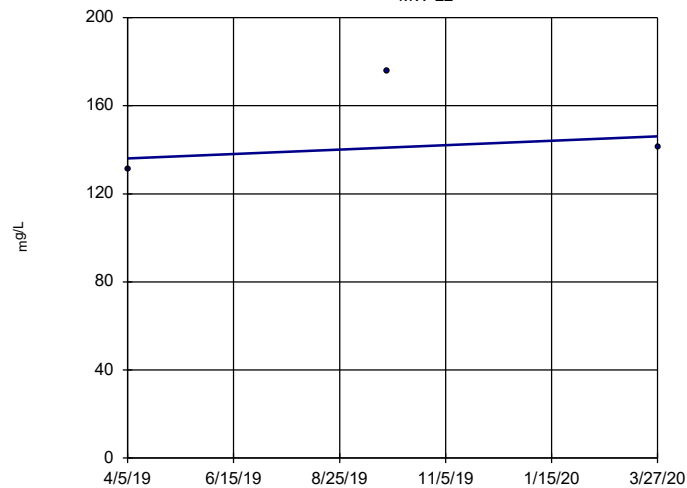


n = 4
Slope = -62.33
units per year.
Mann-Kendall
statistic = -6
critical = -8
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).
With n = 4, no data
set will result in
a significant Mann-
Kendall statistic.

Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

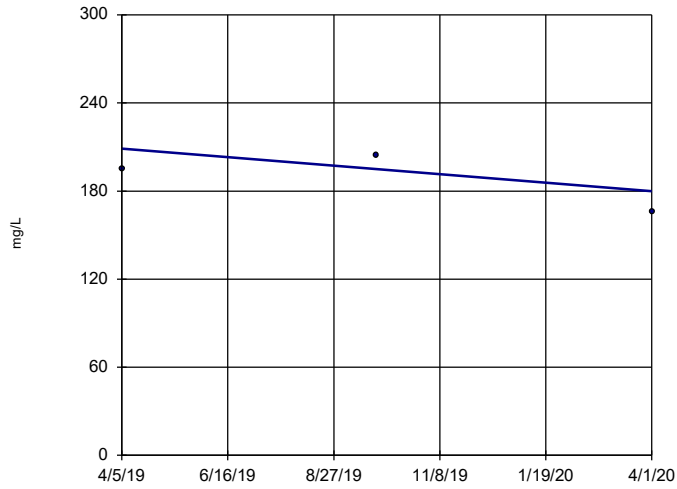
MW-22



n = 3
Slope = 10.22
units per year.
Minimum n for
Mann-Kendall
is 4.

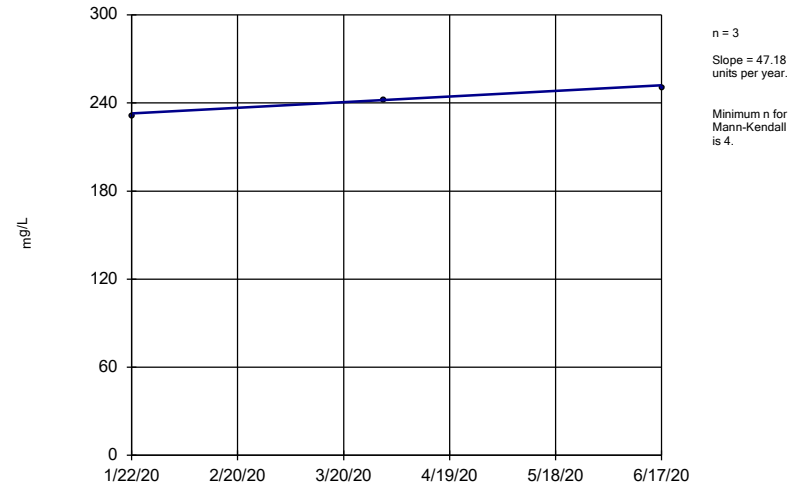
Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-23D



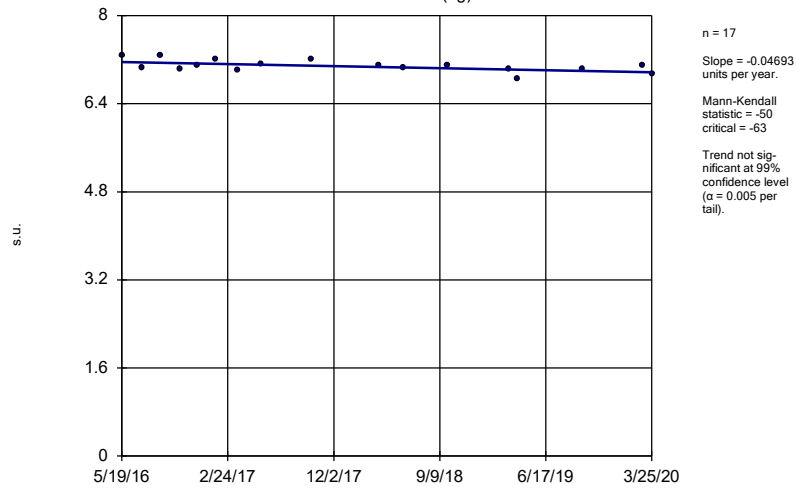
Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-33



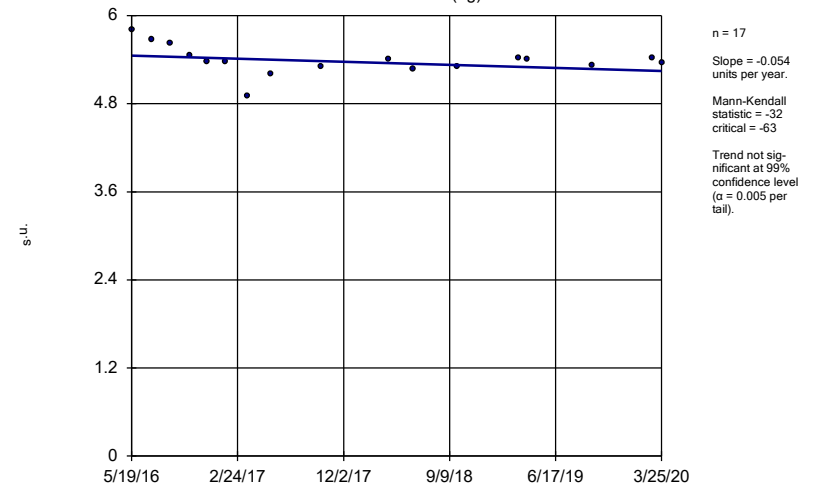
Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWA-1 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

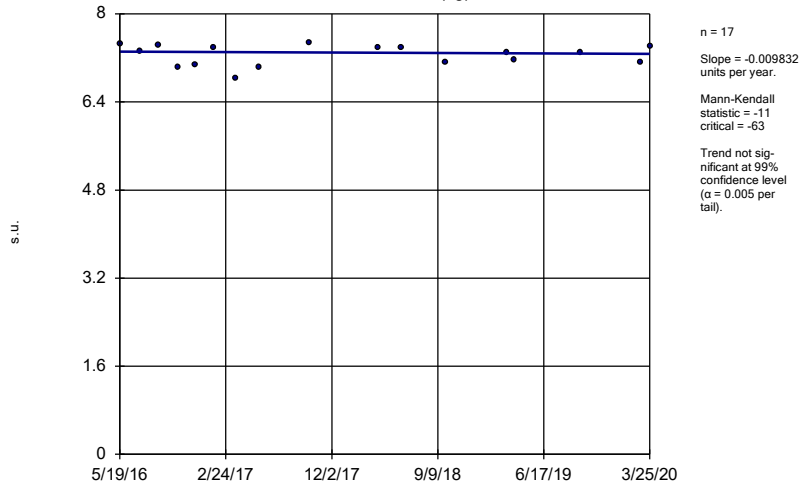
Sen's Slope Estimator
HGWA-2 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

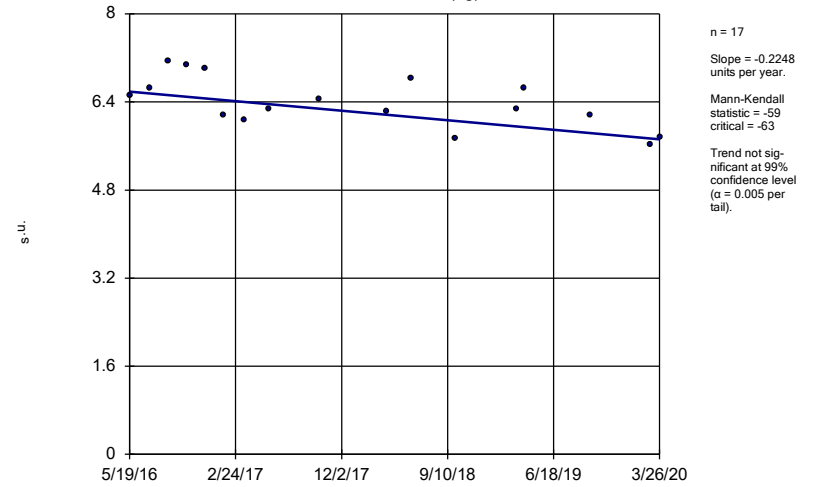
HGWA-3 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

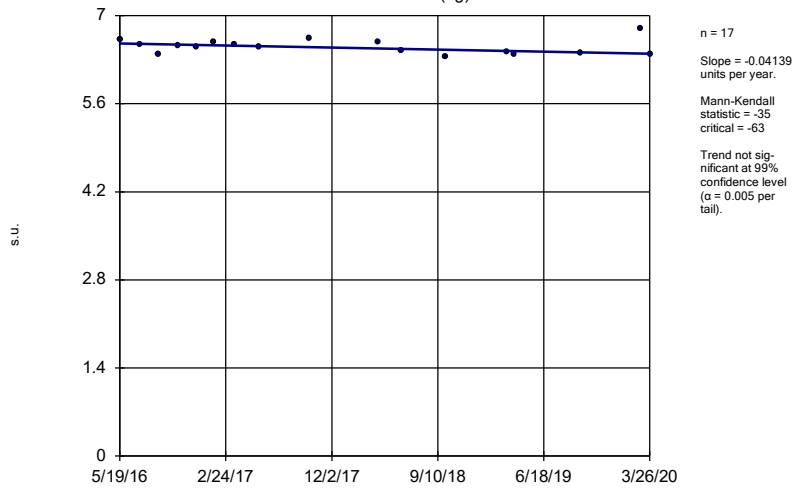
HGWA-4 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

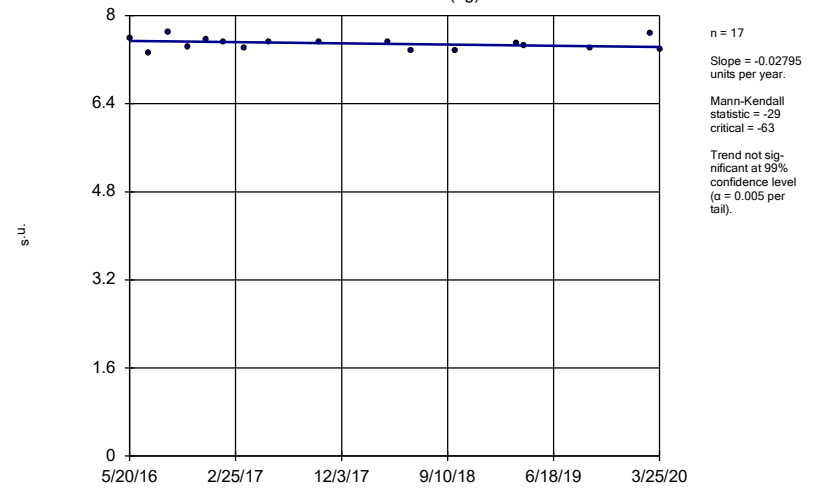
HGWA-5 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

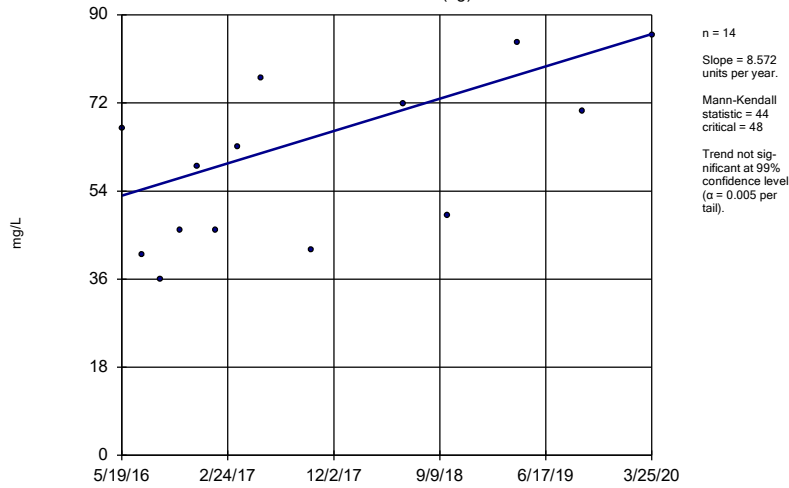
HGWA-6 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

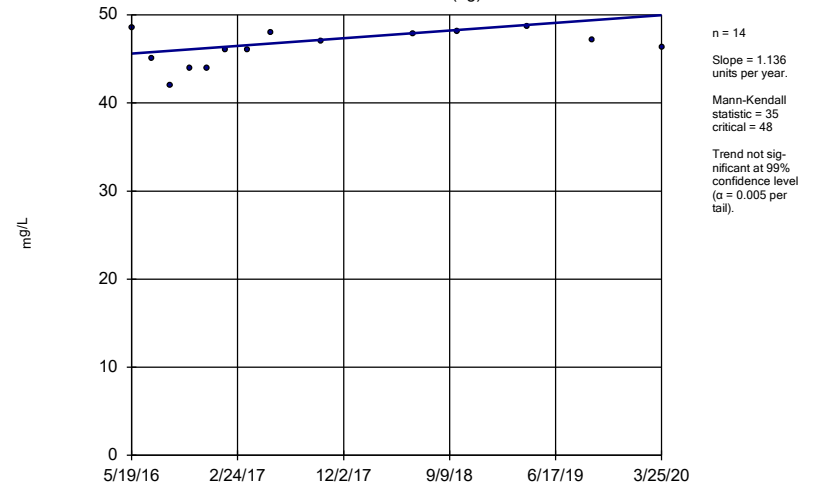
HGWA-1 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

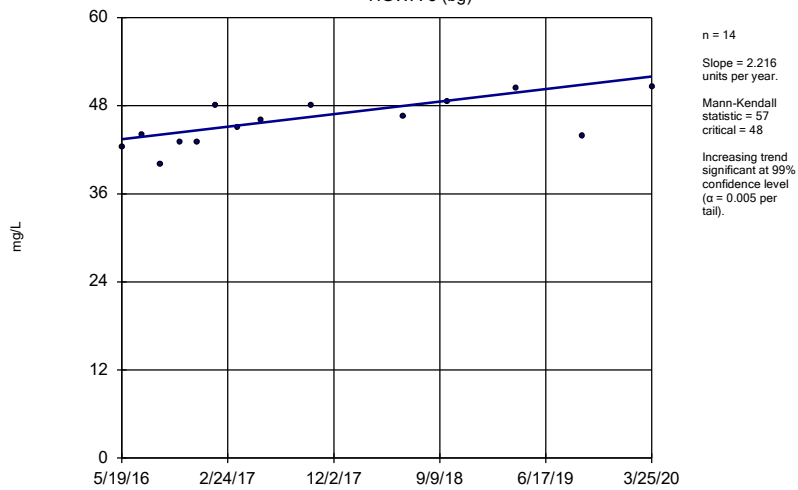
HGWA-2 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

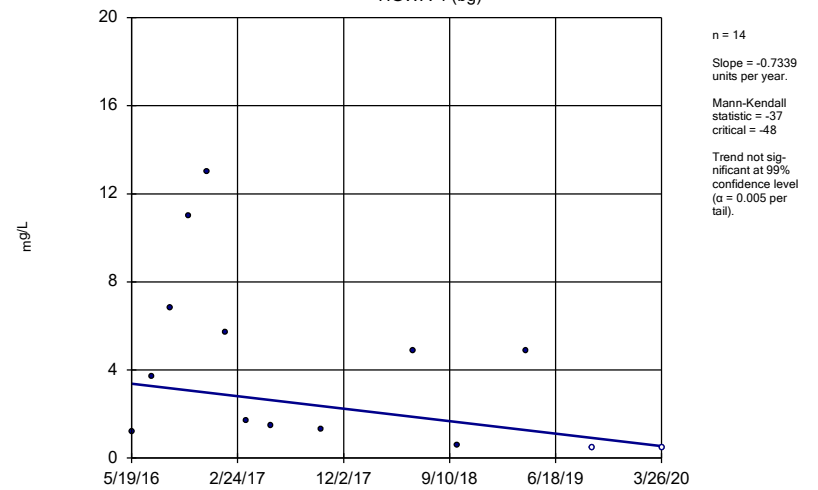


Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

Sen's Slope Estimator

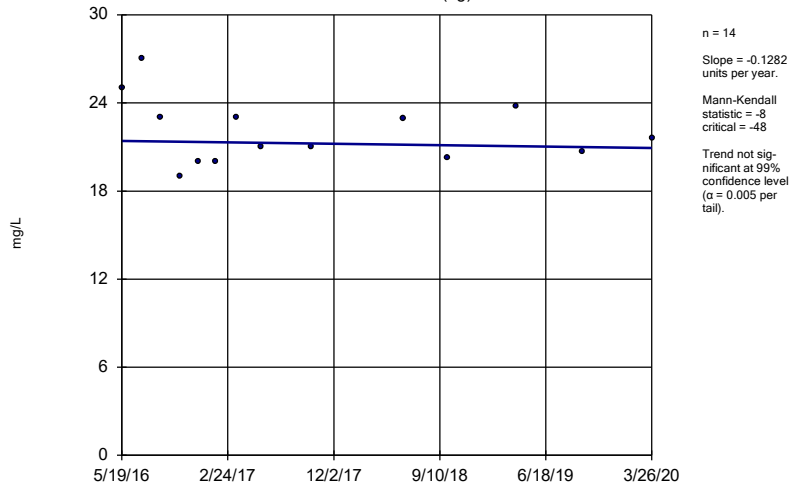
HGWA-4 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

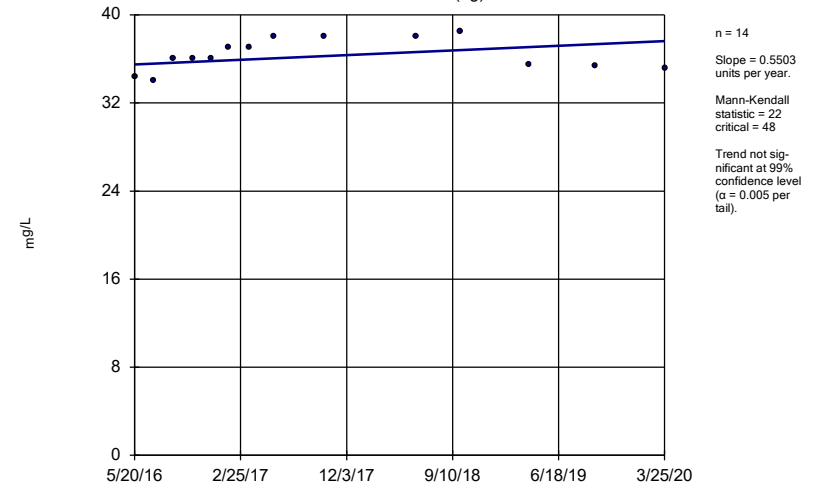
HGWA-5 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

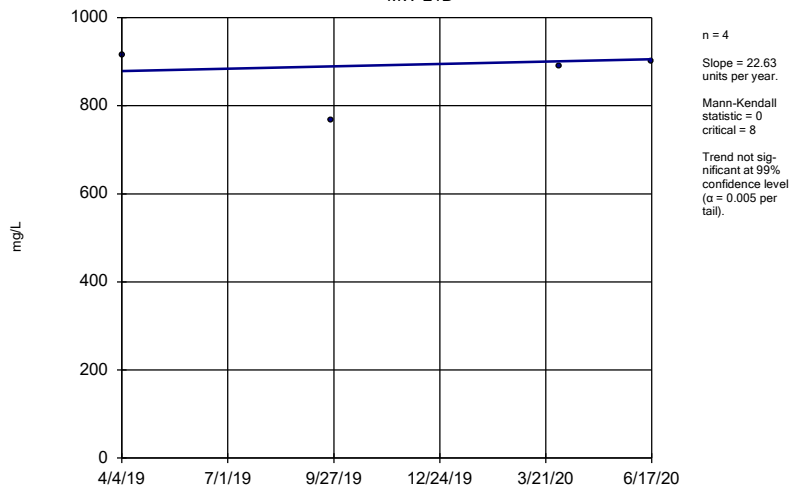
HGWA-6 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

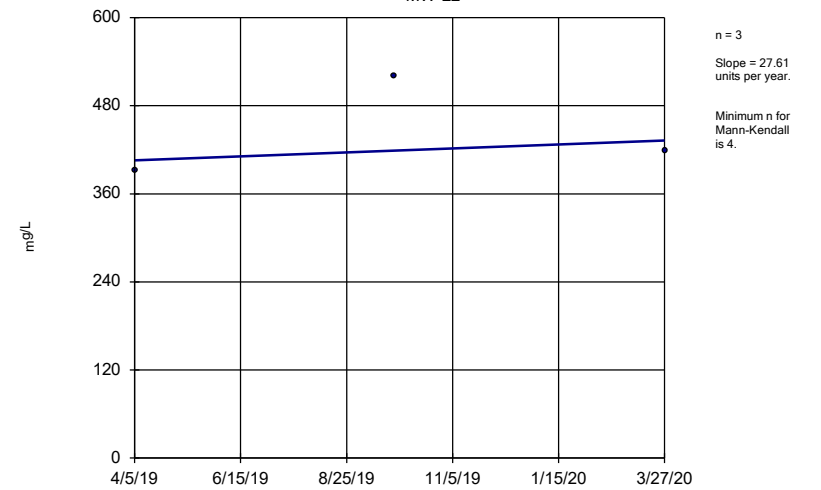
MW-21D



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

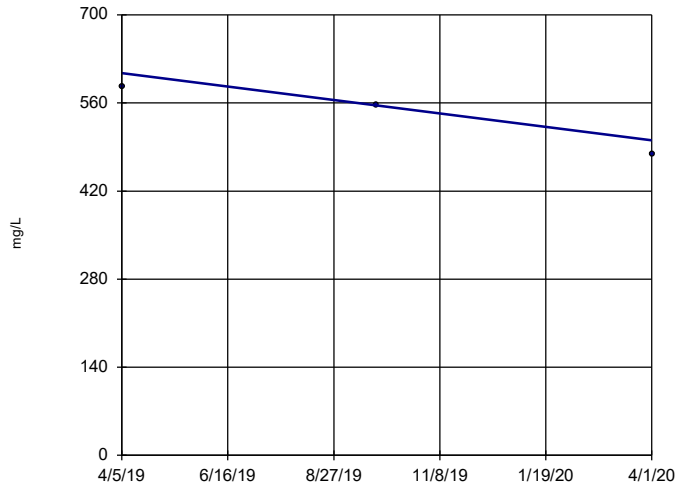
MW-22



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

MW-23D

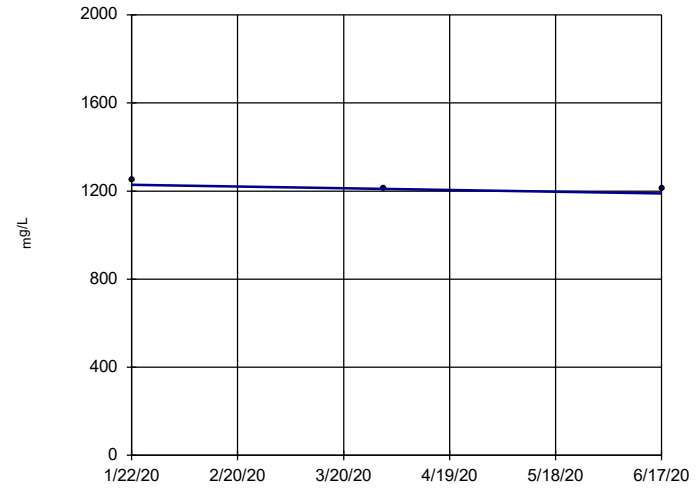


n = 3
 Slope = -107.9
 units per year.
 Minimum n for
 Mann-Kendall
 is 4.

Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

MW-33

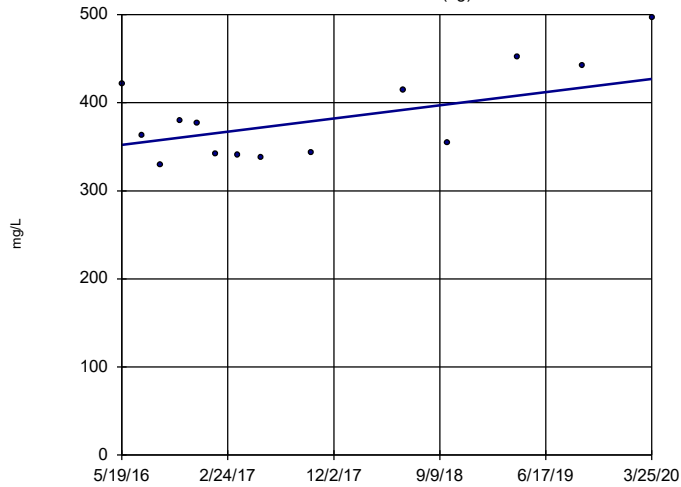


n = 3
 Slope = -99.32
 units per year.
 Minimum n for
 Mann-Kendall
 is 4.

Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-1 (bg)

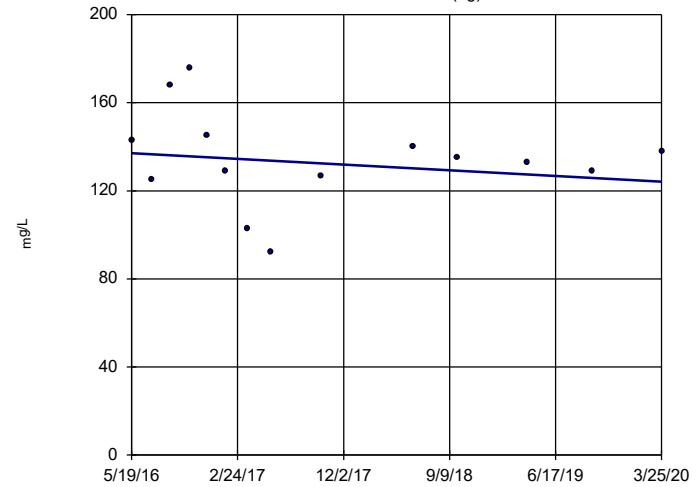


n = 14
 Slope = 19.47
 units per year.
 Mann-Kendall
 statistic = 27
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-2 (bg)

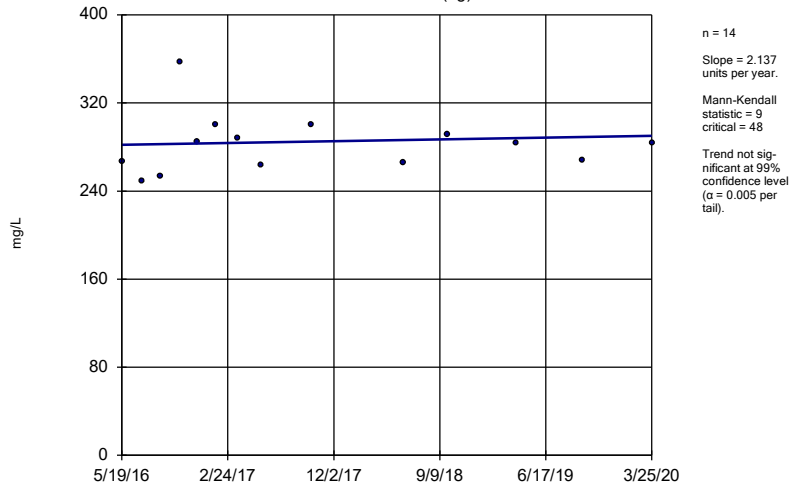


n = 14
 Slope = -3.376
 units per year.
 Mann-Kendall
 statistic = -14
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

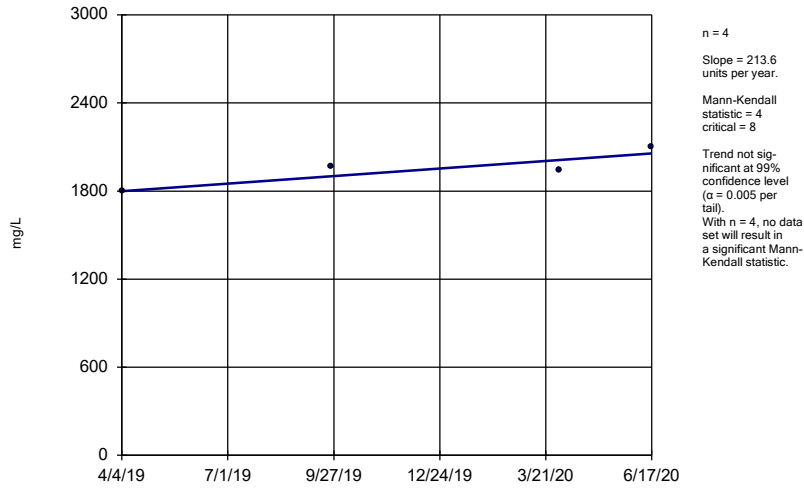
Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

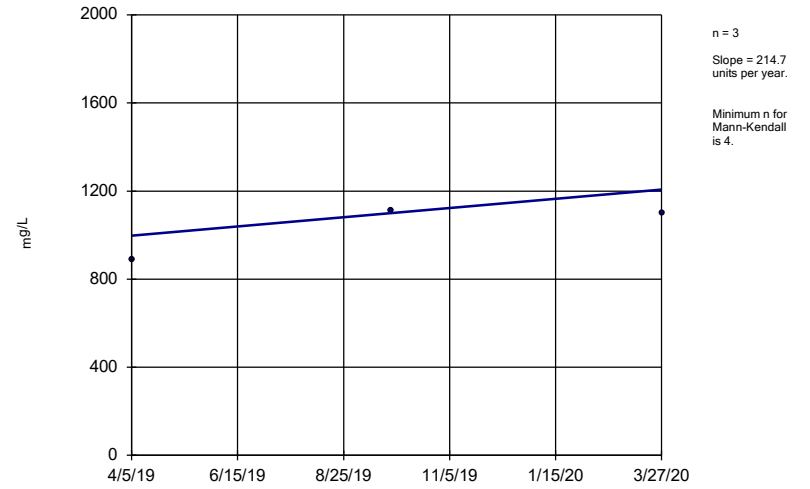


Sen's Slope Estimator
MW-21D



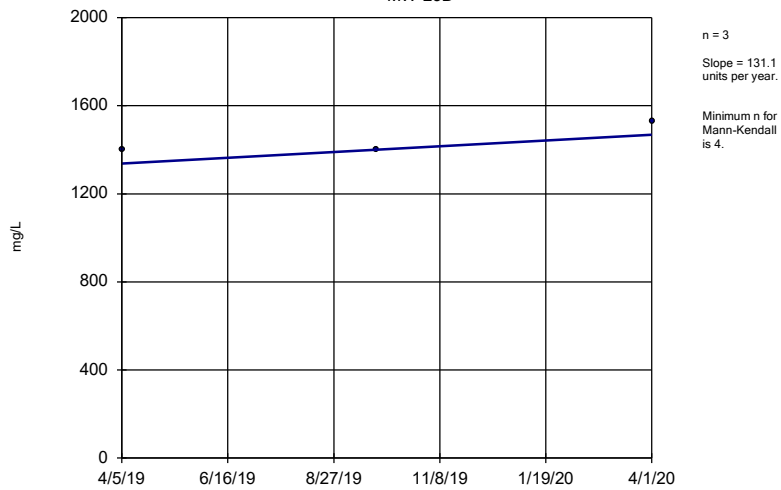
Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-22



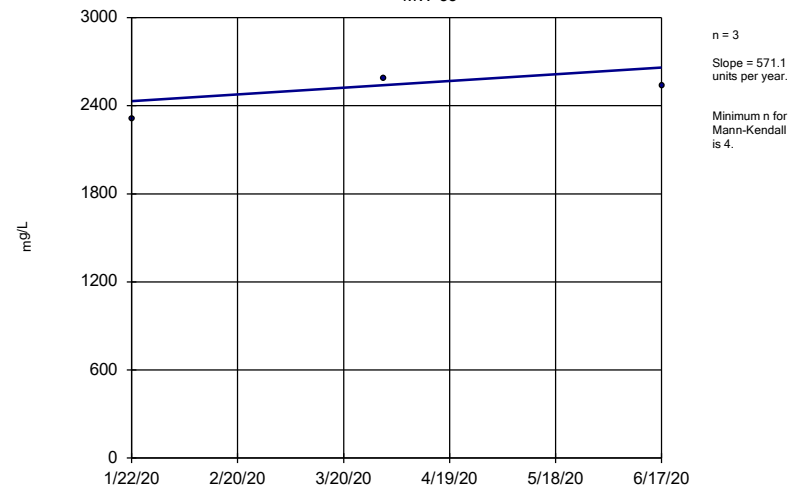
Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-23D



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-33



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE E.

Tolerance Limit Summary Table - Appendix IV

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/7/2020, 12:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	69	n/a	n/a	94.2	n/a	n/a	0.02904	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	96	n/a	n/a	79.17	n/a	n/a	0.007269	NP Inter(NDs)
Barium (mg/L)	n/a	0.22	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	84	n/a	n/a	83.33	n/a	n/a	0.01345	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	96	n/a	n/a	92.71	n/a	n/a	0.007269	NP Inter(NDs)
Chromium (mg/L)	n/a	0.019	84	n/a	n/a	86.9	n/a	n/a	0.01345	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	96	n/a	n/a	67.71	n/a	n/a	0.007269	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	4.36	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Fluoride (mg/L)	n/a	0.36	102	n/a	n/a	34.31	n/a	n/a	0.005343	NP Inter(normality)
Lead (mg/L)	n/a	0.005	84	n/a	n/a	80.95	n/a	n/a	0.01345	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	96	n/a	n/a	27.08	n/a	n/a	0.007269	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	66	n/a	n/a	87.88	n/a	n/a	0.03387	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	84	n/a	n/a	97.62	n/a	n/a	0.01345	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	96	n/a	n/a	98.96	n/a	n/a	0.007269	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	96	n/a	n/a	97.92	n/a	n/a	0.007269	NP Inter(NDs)

FIGURE F.

PLANT HAMMOND AP-2 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.01
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

PLANT HAMMOND AP-2 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

*MCL = Maximum Contaminant Level

*CCR = Coal Combustion Residuals

*GWPS = Groundwater Protection Standard

FIGURE G.

State Confidence Interval Summary (New Wells) - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:26 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u> <u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Molybdenum (mg/L)	MW-21D	0.04409 0.01724	0.01	Yes 6	0.03067	0.009771	0	None	No	0.01	Param.

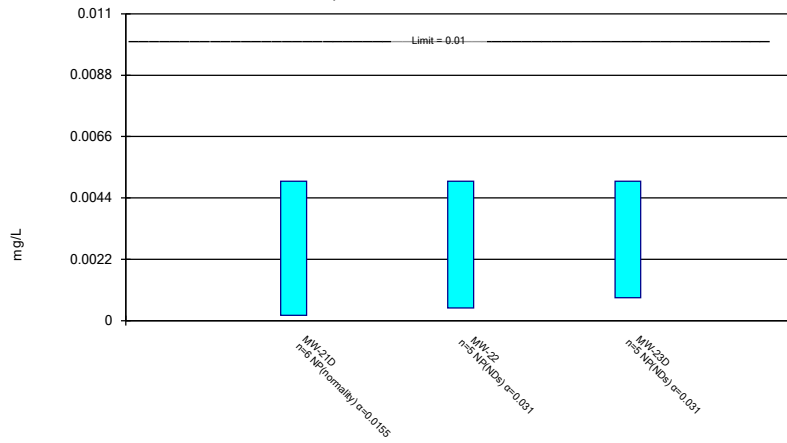
State Confidence Interval Summary (New Wells) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:26 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MW-21D	0.005	0.00019	0.01	No 6	0.003582	0.002225	66.67	None	No	0.0155	NP (normality)
Arsenic (mg/L)	MW-22	0.005	0.00045	0.01	No 5	0.00409	0.002035	80	None	No	0.031	NP (NDs)
Arsenic (mg/L)	MW-23D	0.005	0.00082	0.01	No 5	0.004164	0.001869	80	None	No	0.031	NP (NDs)
Barium (mg/L)	MW-21D	0.08594	0.05039	2	No 6	0.06817	0.01294	0	None	No	0.01	Param.
Barium (mg/L)	MW-22	0.04525	0.01875	2	No 5	0.032	0.007906	0	None	No	0.01	Param.
Barium (mg/L)	MW-23D	0.082	0.06	2	No 5	0.0664	0.008961	0	None	No	0.031	NP (normality)
Beryllium (mg/L)	MW-21D	0.003	0.003	0.004	No 6	0.003	0	100	None	No	0.0155	NP (NDs)
Beryllium (mg/L)	MW-22	0.003	0.003	0.004	No 5	0.003	0	100	None	No	0.031	NP (NDs)
Beryllium (mg/L)	MW-23D	0.003	0.003	0.004	No 5	0.003	0	100	None	No	0.031	NP (NDs)
Cadmium (mg/L)	MW-21D	0.0025	0.0025	0.005	No 6	0.0025	0	100	None	No	0.0155	NP (NDs)
Cadmium (mg/L)	MW-22	0.002448	0.0002957	0.005	No 5	0.001372	0.0006423	0	None	No	0.01	Param.
Cadmium (mg/L)	MW-23D	0.0025	0.0025	0.005	No 5	0.0025	0	100	None	No	0.031	NP (NDs)
Chromium (mg/L)	MW-21D	0.01	0.00057	0.1	No 6	0.008428	0.00385	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	MW-22	0.01	0.0004	0.1	No 5	0.00808	0.004293	80	None	No	0.031	NP (NDs)
Chromium (mg/L)	MW-23D	0.01	0.00086	0.1	No 5	0.008172	0.004088	80	None	No	0.031	NP (NDs)
Cobalt (mg/L)	MW-21D	0.005	0.00034	0.038	No 6	0.004223	0.001902	83.33	None	No	0.0155	NP (NDs)
Cobalt (mg/L)	MW-22	0.04475	0.01645	0.038	No 5	0.0306	0.008444	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-23D	0.001338	0.0009344	0.038	No 5	0.001136	0.0001203	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-21D	1.94	0.691	5	No 6	0.9838	0.478	0	None	No	0.0155	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MW-22	1.433	0.6903	5	No 5	1.062	0.2217	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-23D	1.25	0.872	5	No 5	0.9864	0.1511	0	None	No	0.031	NP (normality)
Fluoride (mg/L)	MW-21D	0.1	0.1	4	No 6	0.1	6.1e-10	83.33	None	No	0.0155	NP (NDs)
Fluoride (mg/L)	MW-22	0.28	0.1	4	No 5	0.142	0.07823	60	None	No	0.031	NP (normality)
Fluoride (mg/L)	MW-23D	0.16	0.1	4	No 5	0.12	0.02828	60	None	No	0.031	NP (normality)
Lead (mg/L)	MW-21D	0.005	0.000047	0.005	No 6	0.003349	0.002557	66.67	None	No	0.0155	NP (normality)
Lead (mg/L)	MW-22	0.005	0.000094	0.005	No 5	0.003039	0.002685	60	None	No	0.031	NP (normality)
Lead (mg/L)	MW-23D	0.005	0.000051	0.005	No 5	0.00401	0.002213	80	None	No	0.031	NP (NDs)
Lithium (mg/L)	MW-21D	0.02746	0.02021	0.03	No 6	0.02383	0.002639	0	None	No	0.01	Param.
Lithium (mg/L)	MW-22	0.002	0.0013	0.03	No 5	0.00148	0.0003033	0	None	No	0.031	NP (normality)
Lithium (mg/L)	MW-23D	0.002854	0.001986	0.03	No 5	0.00242	0.0002588	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-21D	0.04409	0.01724	0.01	Yes 6	0.03067	0.009771	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-22	0.01	0.00013	0.01	No 5	0.008026	0.004414	80	None	No	0.031	NP (NDs)
Molybdenum (mg/L)	MW-23D	0.01	0.0014	0.01	No 5	0.00402	0.003415	20	None	No	0.031	NP (Cohens/xfrm)
Selenium (mg/L)	MW-21D	0.01	0.01	0.05	No 6	0.01	0	100	None	No	0.0155	NP (NDs)
Selenium (mg/L)	MW-22	0.01	0.01	0.05	No 5	0.01	0	100	None	No	0.031	NP (NDs)
Selenium (mg/L)	MW-23D	0.01	0.01	0.05	No 5	0.01	0	100	None	No	0.031	NP (NDs)
Thallium (mg/L)	MW-21D	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	MW-22	0.001	0.001	0.002	No 5	0.001	0	100	None	No	0.031	NP (NDs)
Thallium (mg/L)	MW-23D	0.001	0.001	0.002	No 5	0.001	0	100	None	No	0.031	NP (NDs)

Non-Parametric Confidence Interval

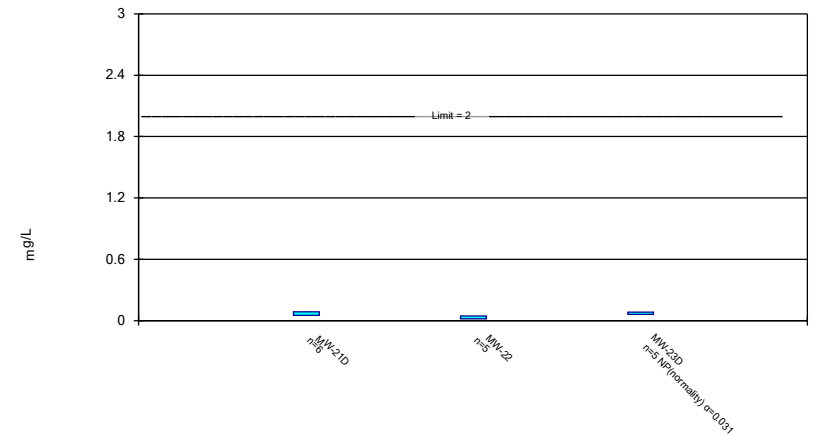
Compliance Limit is not exceeded.



Constituent: Arsenic Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

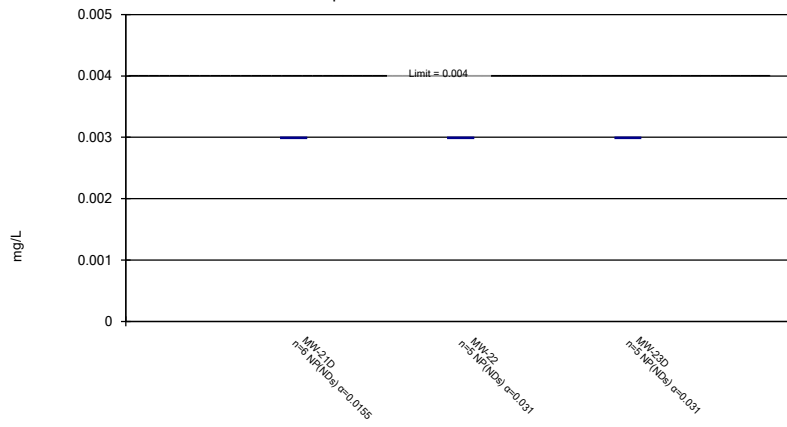
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

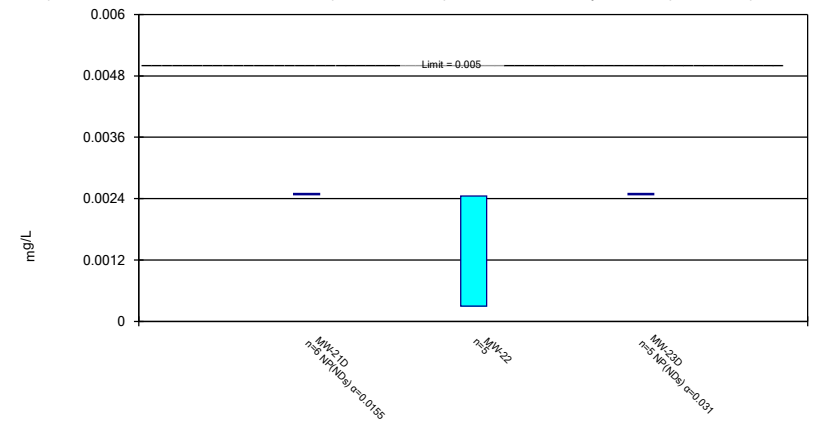
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

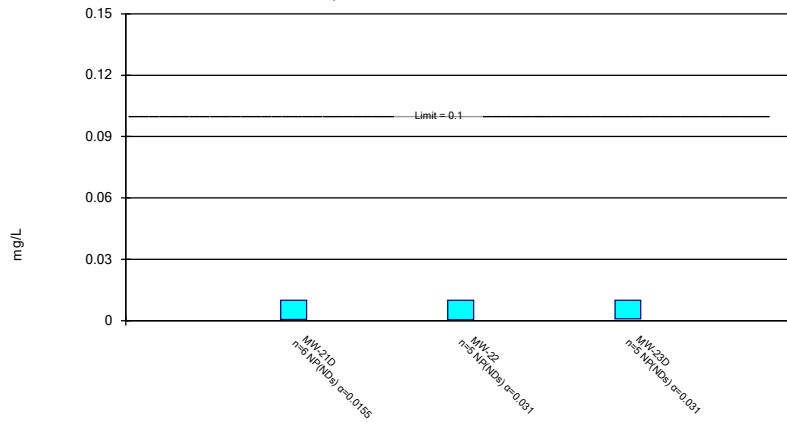
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

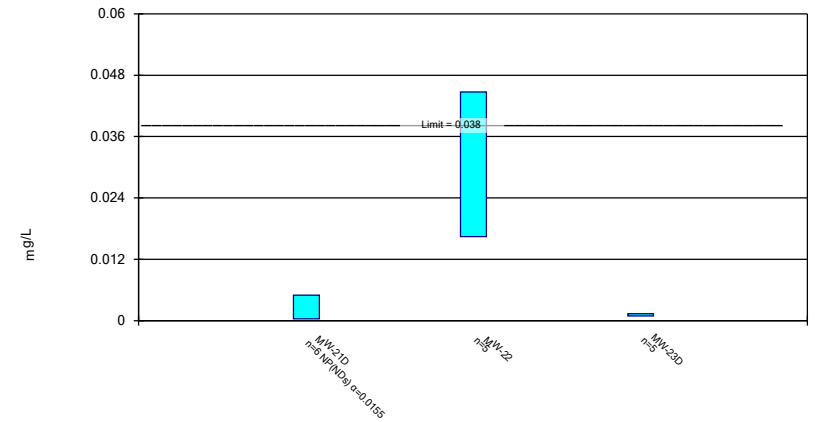
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

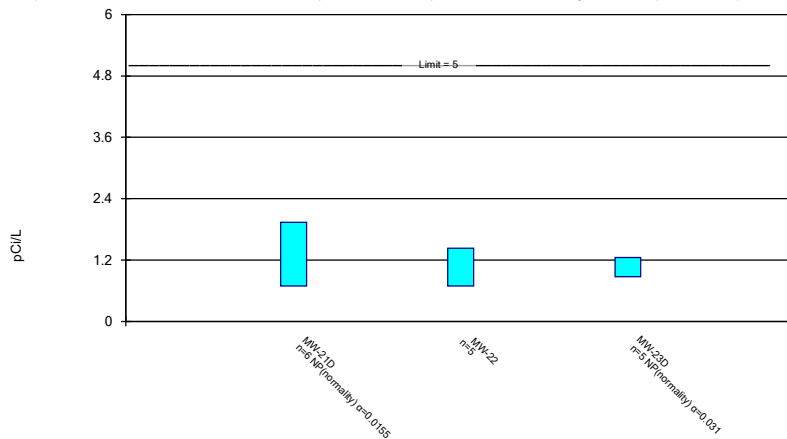
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

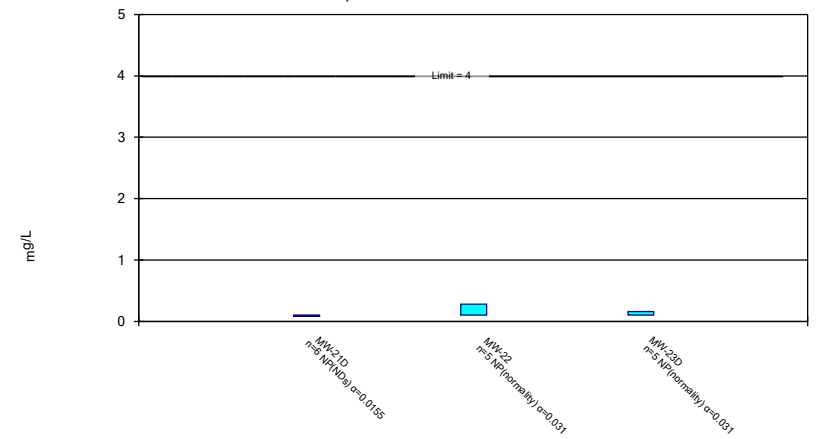
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals -
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

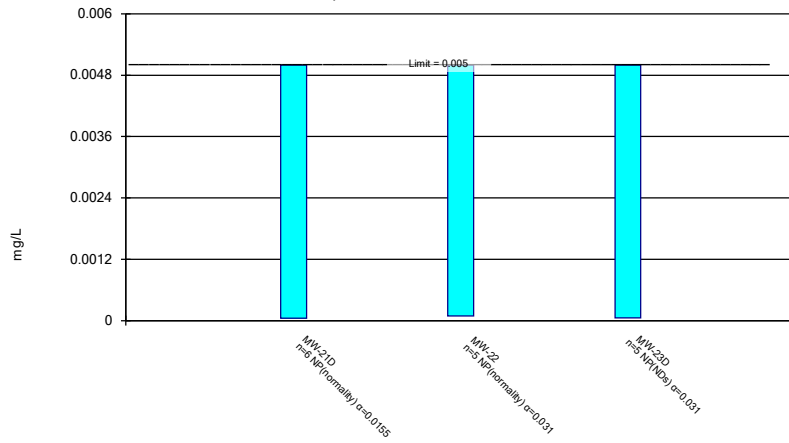
Compliance Limit is not exceeded.



Constituent: Fluoride Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

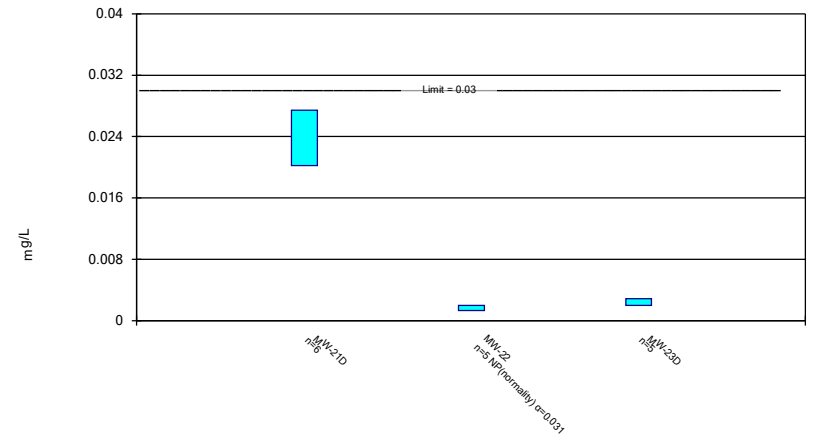
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

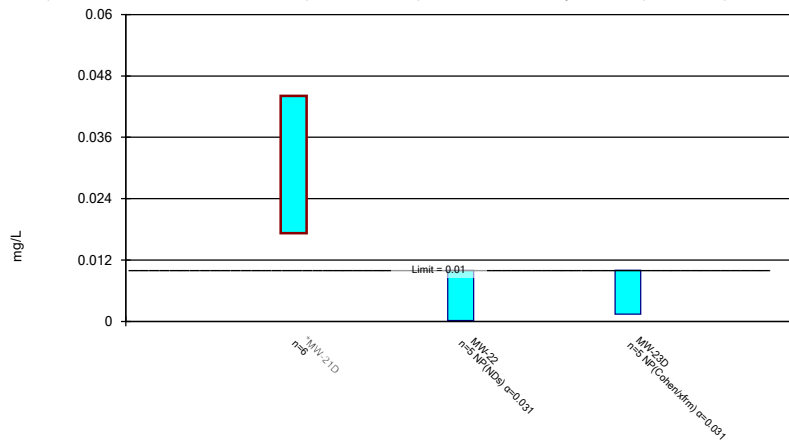
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

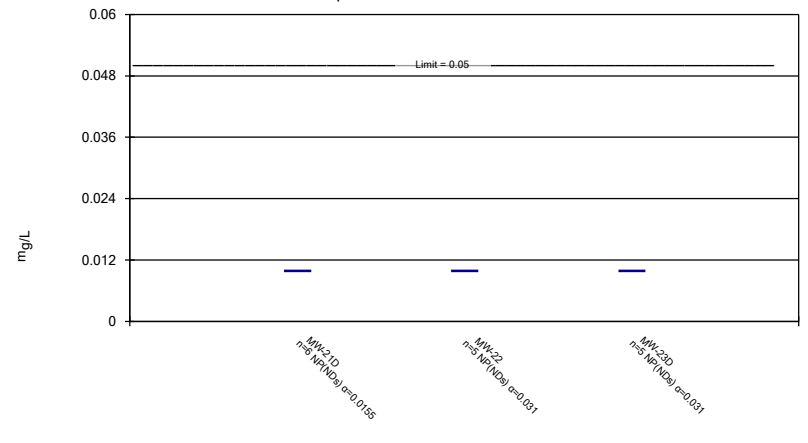
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

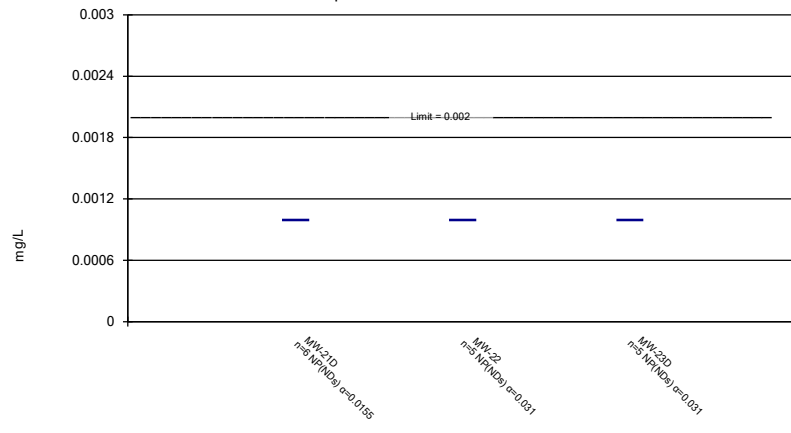
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE H.

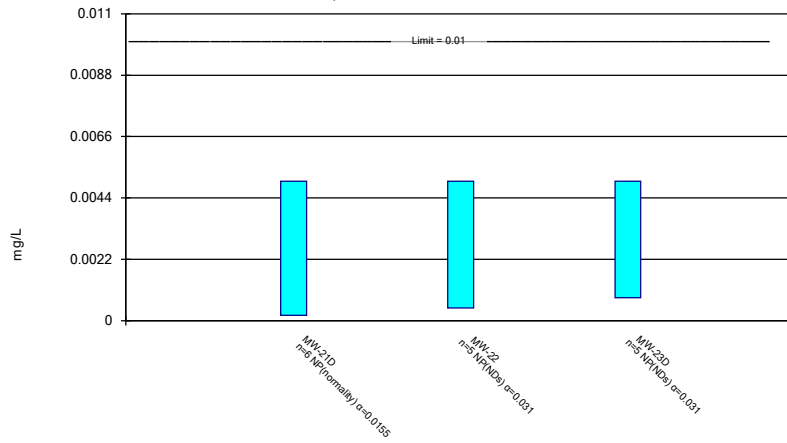
Federal Confidence Interval Summary (New Wells) - All Results (No Significant)

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:17 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MW-21D	0.005	0.00019	0.01	No 6	0.003582	0.002225	66.67	None	No	0.0155	NP (normality)
Arsenic (mg/L)	MW-22	0.005	0.00045	0.01	No 5	0.00409	0.002035	80	None	No	0.031	NP (NDs)
Arsenic (mg/L)	MW-23D	0.005	0.00082	0.01	No 5	0.004164	0.001869	80	None	No	0.031	NP (NDs)
Barium (mg/L)	MW-21D	0.08594	0.05039	2	No 6	0.06817	0.01294	0	None	No	0.01	Param.
Barium (mg/L)	MW-22	0.04525	0.01875	2	No 5	0.032	0.007906	0	None	No	0.01	Param.
Barium (mg/L)	MW-23D	0.082	0.06	2	No 5	0.0664	0.008961	0	None	No	0.031	NP (normality)
Beryllium (mg/L)	MW-21D	0.003	0.003	0.004	No 6	0.003	0	100	None	No	0.0155	NP (NDs)
Beryllium (mg/L)	MW-22	0.003	0.003	0.004	No 5	0.003	0	100	None	No	0.031	NP (NDs)
Beryllium (mg/L)	MW-23D	0.003	0.003	0.004	No 5	0.003	0	100	None	No	0.031	NP (NDs)
Cadmium (mg/L)	MW-21D	0.0025	0.0025	0.005	No 6	0.0025	0	100	None	No	0.0155	NP (NDs)
Cadmium (mg/L)	MW-22	0.002448	0.0002957	0.005	No 5	0.001372	0.0006423	0	None	No	0.01	Param.
Cadmium (mg/L)	MW-23D	0.0025	0.0025	0.005	No 5	0.0025	0	100	None	No	0.031	NP (NDs)
Chromium (mg/L)	MW-21D	0.01	0.00057	0.1	No 6	0.008428	0.00385	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	MW-22	0.01	0.0004	0.1	No 5	0.00808	0.004293	80	None	No	0.031	NP (NDs)
Chromium (mg/L)	MW-23D	0.01	0.00086	0.1	No 5	0.008172	0.004088	80	None	No	0.031	NP (NDs)
Cobalt (mg/L)	MW-21D	0.005	0.00034	0.038	No 6	0.004223	0.001902	83.33	None	No	0.0155	NP (NDs)
Cobalt (mg/L)	MW-22	0.04475	0.01645	0.038	No 5	0.0306	0.008444	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-23D	0.001338	0.0009344	0.038	No 5	0.001136	0.0001203	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-21D	1.94	0.691	5	No 6	0.9838	0.478	0	None	No	0.0155	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MW-22	1.433	0.6903	5	No 5	1.062	0.2217	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-23D	1.25	0.872	5	No 5	0.9864	0.1511	0	None	No	0.031	NP (normality)
Fluoride (mg/L)	MW-21D	0.1	0.1	4	No 6	0.1	6.1e-10	83.33	None	No	0.0155	NP (NDs)
Fluoride (mg/L)	MW-22	0.28	0.1	4	No 5	0.142	0.07823	60	None	No	0.031	NP (normality)
Fluoride (mg/L)	MW-23D	0.16	0.1	4	No 5	0.12	0.02828	60	None	No	0.031	NP (normality)
Lead (mg/L)	MW-21D	0.005	0.000047	0.015	No 6	0.003349	0.002557	66.67	None	No	0.0155	NP (normality)
Lead (mg/L)	MW-22	0.005	0.000094	0.015	No 5	0.003039	0.002685	60	None	No	0.031	NP (normality)
Lead (mg/L)	MW-23D	0.005	0.000051	0.015	No 5	0.00401	0.002213	80	None	No	0.031	NP (NDs)
Lithium (mg/L)	MW-21D	0.02746	0.02021	0.04	No 6	0.02383	0.002639	0	None	No	0.01	Param.
Lithium (mg/L)	MW-22	0.002	0.0013	0.04	No 5	0.00148	0.0003033	0	None	No	0.031	NP (normality)
Lithium (mg/L)	MW-23D	0.002854	0.001986	0.04	No 5	0.00242	0.0002588	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-21D	0.04409	0.01724	0.1	No 6	0.03067	0.009771	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-22	0.01	0.00013	0.1	No 5	0.008026	0.004414	80	None	No	0.031	NP (NDs)
Molybdenum (mg/L)	MW-23D	0.01	0.0014	0.1	No 5	0.00402	0.003415	20	None	No	0.031	NP (Cohens/xfrm)
Selenium (mg/L)	MW-21D	0.01	0.01	0.05	No 6	0.01	0	100	None	No	0.0155	NP (NDs)
Selenium (mg/L)	MW-22	0.01	0.01	0.05	No 5	0.01	0	100	None	No	0.031	NP (NDs)
Selenium (mg/L)	MW-23D	0.01	0.01	0.05	No 5	0.01	0	100	None	No	0.031	NP (NDs)
Thallium (mg/L)	MW-21D	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	MW-22	0.001	0.001	0.002	No 5	0.001	0	100	None	No	0.031	NP (NDs)
Thallium (mg/L)	MW-23D	0.001	0.001	0.002	No 5	0.001	0	100	None	No	0.031	NP (NDs)

Non-Parametric Confidence Interval

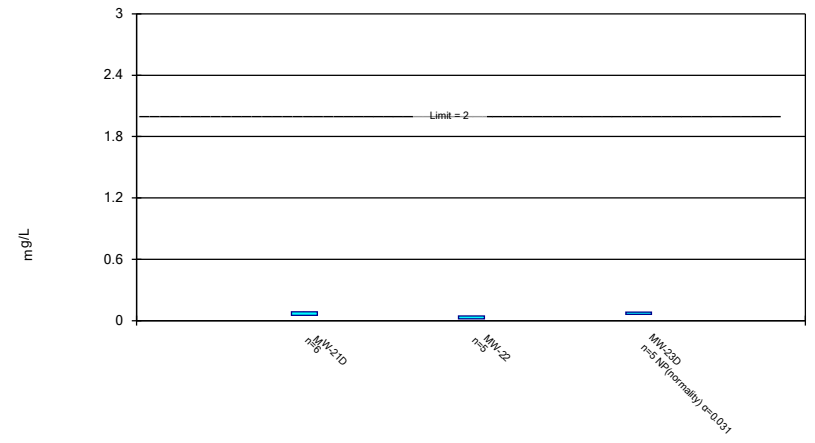
Compliance Limit is not exceeded.



Constituent: Arsenic Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

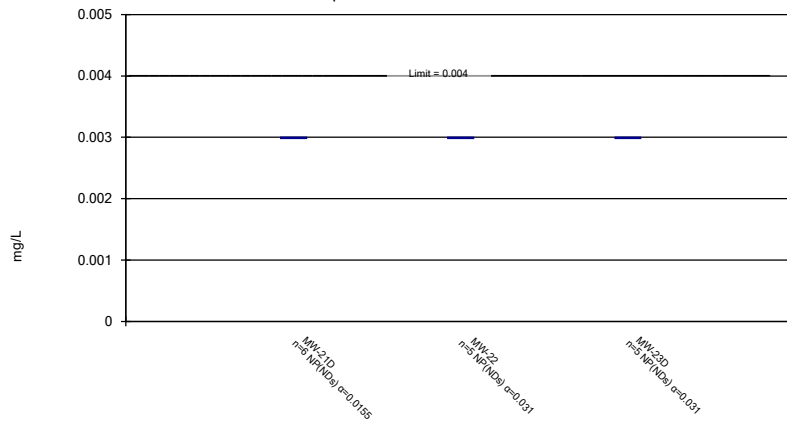
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

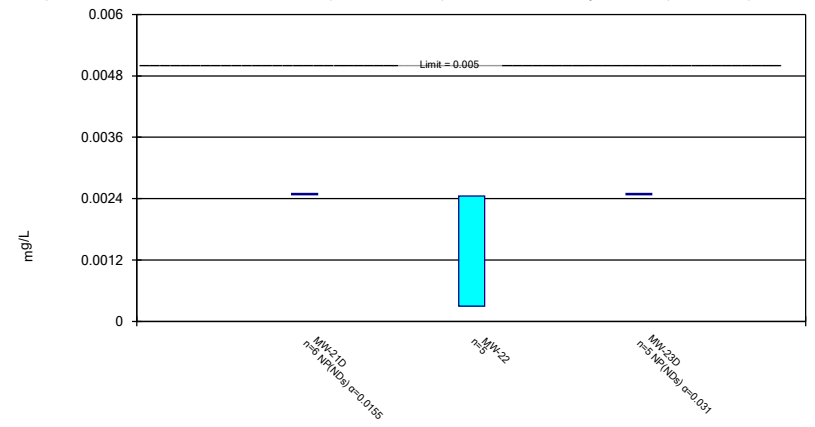
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

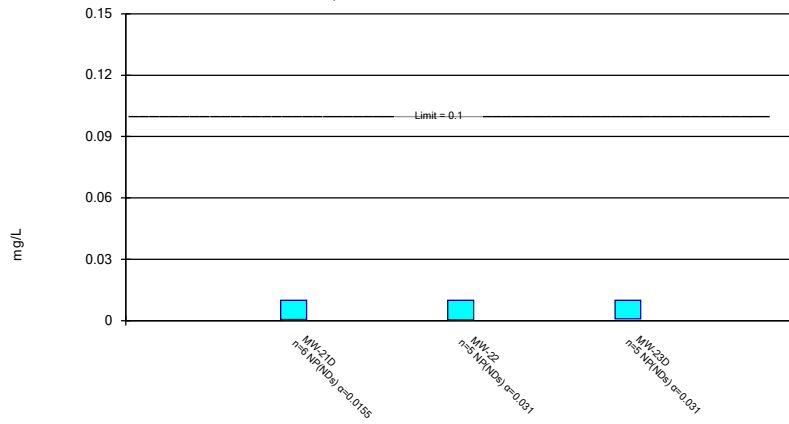
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

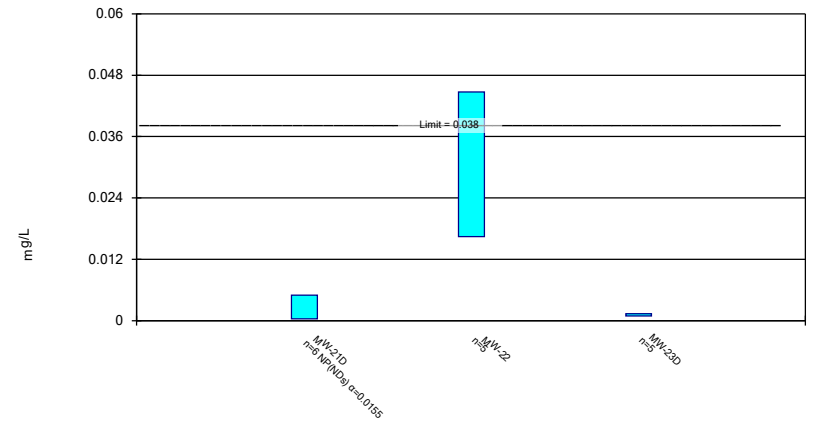
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

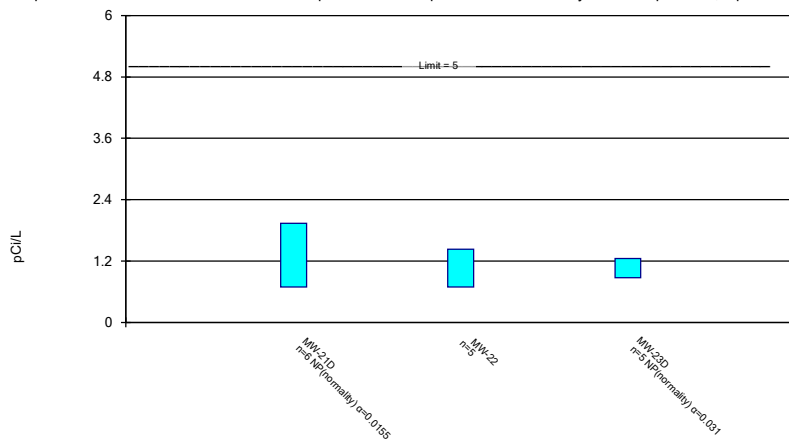
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

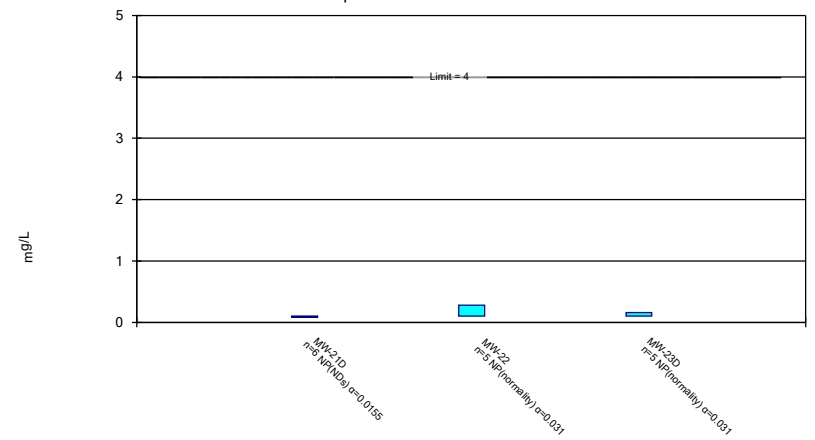
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals -
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

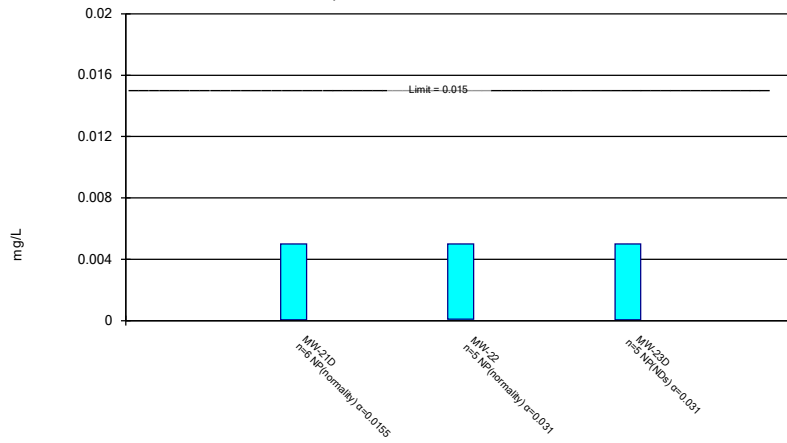
Compliance Limit is not exceeded.



Constituent: Fluoride Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

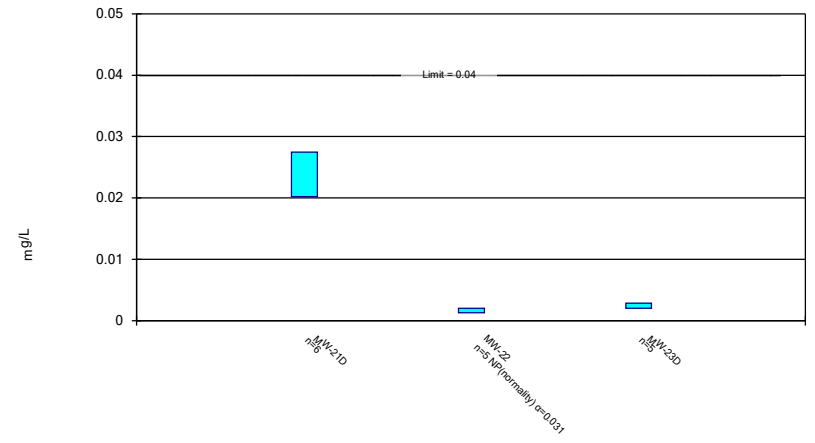
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

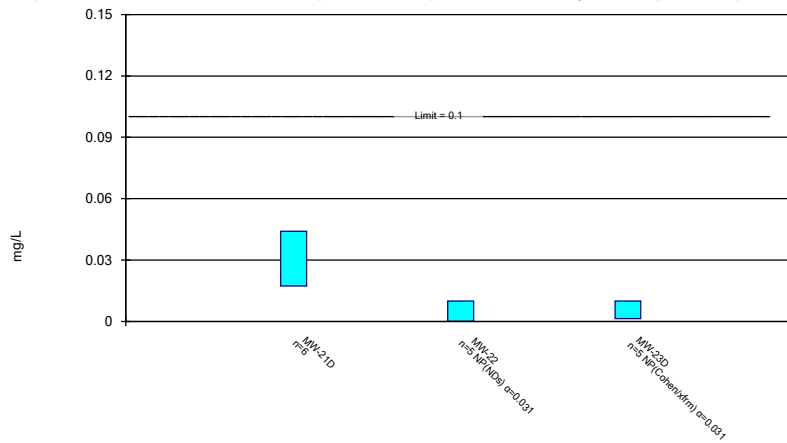
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

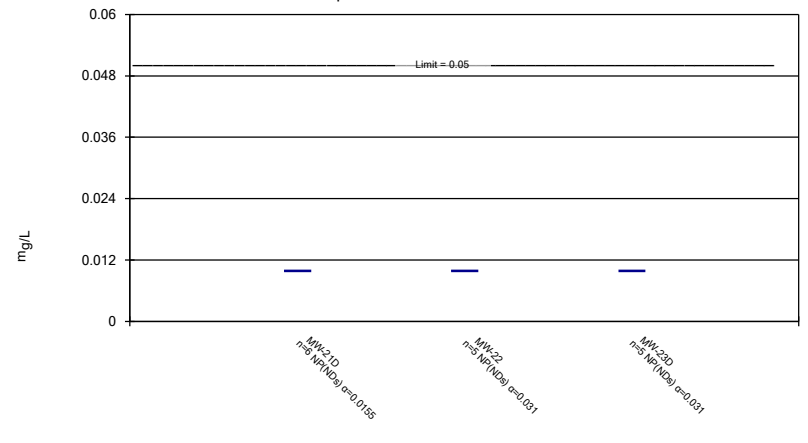
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

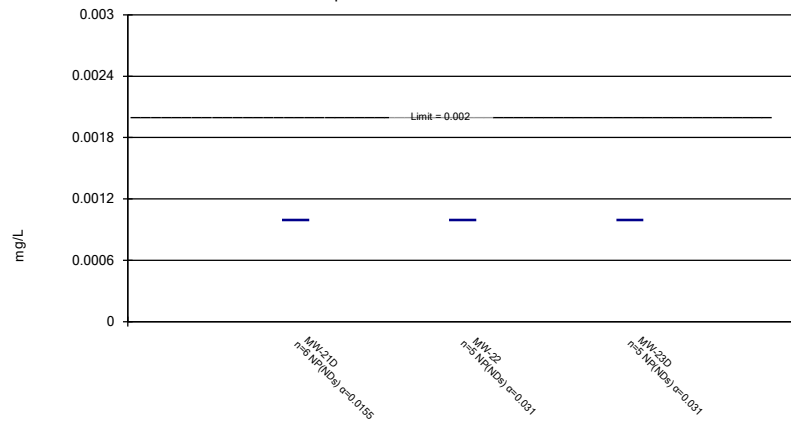
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

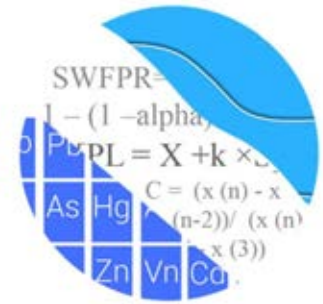
Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

GROUNDWATER STATS CONSULTING



February 10, 2021

Southern Company Services
Attn: Ms. Kristen Jurinko
241 Ralph McGill Blvd NE, Bin 10160
Atlanta, Georgia 30308

Re: Plant Hammond Ash Pond 2 (AP-2)
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 September 2020 quality for Georgia Power Company's Plant Hammond AP-2. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015), the Georgia Environmental Protection Division Rules for Solid Waste Management Chapter 391-3-4-.10 and follows the USEPA Unified Guidance (2009).

Sampling began for the CCR program in 2016 and at least 8 samples were collected for all wells except for newer upgradient wells HGWA-42D, HGWA-43D, and HGWA-44D and delineation wells. Sampling began in 2019 for delineation wells MW-21D, MW-22, and MW-23D; and in 2020 for upgradient wells HGWA-42D, HGWA-43D, HGWA-44D, for piezometers MW-33 and MW-35, and for delineation well MW-37D. Data from all wells are plotted on the time series graphs and box plots. A minimum of 4 samples is required for construction of confidence intervals for the Appendix IV constituents.

The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient well:** HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, HGWA-6, HGWA-42D, HGWA-43D, and HGWA-44D
- **Downgradient wells:** HGWC-14, HGWC-15, HGWC-16, HGWC-17, and HGWC-18

- **Piezometers:** MW-33 and MW-35
- **Delineation wells:** MW-21D, MW-22, MW-23D, and MW-37D

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting. The statistical analysis was performed according to the groundwater data screening that was performed in April 2018 by GSC and approved by Dr. Cameron, PhD Statistician with MacStat Consulting and primary author of the USEPA Unified Guidance.

The CCR program consists of the constituents listed below. The terms “parameters” and “constituents” are used interchangeably.

- **Appendix III** (Detection Monitoring) - boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) – arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, 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, annual Scan events are conducted to determine which Appendix IV constituents are detected in downgradient wells and, therefore, require statistical analysis. Any constituents that are not detected do not require statistical analysis. During the Scan event conducted in March 2020, antimony and mercury were not detected. For all constituents, a substitution of the most recent reporting limit is used for nondetect data.

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. No values were flagged as outliers (Figure C).

In earlier analyses, data at all wells were evaluated for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix III parameters based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of

downgradient wells when intrawell statistical methods are recommended. Power curves were provided to demonstrate that the selected statistical methods for Appendix III parameters comply with the USEPA Unified Guidance. The EPA suggests that 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 1-of-2 resamples 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 practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% nondetects, the Kaplan-Meier nondetect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% nondetects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the interwell case, prediction limits are updated

with upgradient well data during each event after careful screening for any new outliers. In 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.

Statistical Evaluation of Appendix III Parameters – September 2020

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed for all Appendix III parameters using all historical upgradient well data through September 2020 (Figure D). Downgradient measurements were compared to these interwell background limits. Interwell prediction limits use all available upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs).

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When the resample confirm the initial exceedance, a statistically significant increase (SSI) is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result; therefore, no further action is necessary. If no resample is collected, the initial exceedance is automatically confirmed.

When the September 2020 compliance data from downgradient wells were compared to interwell prediction limits, several exceedances were noted. A summary table of these findings is provided along with the prediction limits (Figure D).

When prediction limit exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable (Figure E). Upgradient well data are included in the trend analyses for all parameters found to exceed their prediction limit in downgradient wells to identify whether similar patterns exist upgradient of the site. Upgradient trends are 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 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 trends:

- Boron: HGWA-2 (upgradient) and HGWC-16
- Calcium: HGWC-16 and HGWC-17
- Chloride: HGWA-4 (upgradient), HGWC-16, and HGWC-17
- Sulfate: HGWA-3 (upgradient)
- TDS: HGWC-16, and HGWC-17

Decreasing trends:

- Chloride: HGWA-4 (upgradient) and HGWC-14
- pH: HGWA-4 (upgradient)
- TDS: HGWC-14

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 Ground Water 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. Confidence intervals are provided for Appendix IV well/constituent pairs with detections and with current reported data. The methods are described below.

Statistical Evaluation of Appendix IV Parameters – September 2020

Site specific background limits were calculated as upper one-sided tolerance limits (UTLs) on pooled upgradient interwell data for each of the Appendix IV constituents (Figure F). When varying detection limits were present in upgradient wells, all nondetects were substituted with the most recent reporting limit. Parametric tolerance limits were 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) (Figure G).

As described in 40 CFR §257.95(h) (1-3), the GWPS is:

- The maximum contaminant level (MCL) established under §141.62 and §141.66 of this title

- Where an MCL has not been established for a constituent, CCR-rule specified levels have been specified for cobalt (0.006 mg/L), lead (0.015 mg/L), lithium (0.040 mg/L), and molybdenum (0.100 mg/L)
- The respective background level for a constituent when the background level is higher than the MCL or Federal CCR Rule identified GWPS

On July 30, 2018, USEPA revised the Federal CCR Rule updating GWPS for cobalt, lead, lithium, and molybdenum as described above in 40 CFR §257.95(h)(2). Georgia EPD has not incorporated the updated GWPS into the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, for sites regulated under Georgia EPD Rules, the GWPS is:

- The MCL or
- The background concentration when an MCL is not established or when the background concentration is higher than the MCL.

Following the above Georgia EPD Rule requirements and the CCR Rule, State and Federal GWPS were established for statistical comparison of Appendix IV constituents for the September 2020 sample event (Figure G). Delineation wells were included when a minimum of 4 samples were available.

To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV constituents in each downgradient or delineation well and piezometer when a minimum of 4 samples was available. The Sanitas software was used to calculate the tolerance limits and the confidence intervals—either parametric or nonparametric as appropriate. For the State requirements, confidence intervals were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a). For the Federal requirements, confidence intervals were compared to the GWPS prepared according to the CCR Rule. Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. If there is an exceedance of the GWPS, a statistically significant level (SSL) exceedance is identified. Summaries of the confidence interval results, along with graphical comparison against GWPS for both State and Federal requirements, follow this letter (Figures H and I, respectively).

The following confidence interval exceedances were identified:

State

- Cobalt: HGWC-18 and MW-33
- Molybdenum: MW-21D

Federal

•Cobalt: HGWC-18 and MW-33

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for Hammond AP-2. If you have any questions or comments, please feel free to contact me.

For Groundwater Stats Consulting,

A handwritten signature in cursive script that reads "Kristina Rayner".

Kristina L. Rayner
Groundwater Statistician

100% Non-Detects

Analysis Run 1/12/2021 3:18 PM View: 100% Nondetects
Plant Hammond Client: Southern Company Data: Hammond AP-2

Arsenic (mg/L)

HGWA-4, HGWA-6, HGWA-44D, HGWA-42D

Beryllium (mg/L)

HGWA-1, HGWA-3, HGWA-5, HGWA-6, HGWC-15, HGWC-16, HGWC-17, MW-21D, MW-23D, HGWA-43D, HGWA-44D, HGWA-42D

Cadmium (mg/L)

HGWA-1, HGWA-3, HGWA-4, HGWA-5, HGWA-6, HGWC-16, MW-21D, MW-37D, HGWA-43D, HGWA-44D, HGWA-42D

Chromium (mg/L)

HGWA-43D

Cobalt (mg/L)

HGWA-3, HGWA-6, HGWA-43D, HGWA-44D, HGWA-42D

Lithium (mg/L)

HGWC-14

Molybdenum (mg/L)

HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, HGWC-14, HGWC-16, HGWC-17, HGWC-18

Selenium (mg/L)

HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-6, MW-21D, MW-23D, MW-37D, HGWA-43D, HGWA-44D, HGWA-42D

Thallium (mg/L)

HGWA-1, HGWA-3, HGWA-4, HGWA-5, HGWC-15, HGWC-16, MW-21D, MW-22, MW-23D, MW-37D, HGWA-43D, HGWA-44D, HGWA-42D

Outlier Summary

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/12/2021, 3:21 PM

No outliers identified.

Interwell Prediction Limits - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/7/2021, 11:38 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.29	n/a	9/18/2020	11	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-15	0.29	n/a	9/17/2020	2.2	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-16	0.29	n/a	9/17/2020	2.4	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-17	0.29	n/a	9/16/2020	6.7	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-18	0.29	n/a	9/15/2020	9.4	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-14	138	n/a	9/18/2020	623	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-15	138	n/a	9/17/2020	188	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-16	138	n/a	9/17/2020	190	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-17	138	n/a	9/16/2020	277	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-18	138	n/a	9/15/2020	430	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	9/18/2020	288	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	9/17/2020	108	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	9/17/2020	99.3	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	9/16/2020	156	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	9/15/2020	150	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.84	4.9	9/18/2020	4.88	Yes	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.84	4.9	9/15/2020	4.47	Yes	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	9/18/2020	1260	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	9/17/2020	416	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	9/17/2020	254	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	9/16/2020	467	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	9/15/2020	1080	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	417	n/a	9/18/2020	2440	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	417	n/a	9/17/2020	956	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	417	n/a	9/17/2020	804	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	417	n/a	9/16/2020	1220	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	417	n/a	9/15/2020	1890	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Interwell Prediction Limits - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/7/2021, 11:38 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.29	n/a	9/18/2020	11	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-15	0.29	n/a	9/17/2020	2.2	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-16	0.29	n/a	9/17/2020	2.4	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-17	0.29	n/a	9/16/2020	6.7	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-18	0.29	n/a	9/15/2020	9.4	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-14	138	n/a	9/18/2020	623	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-15	138	n/a	9/17/2020	188	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-16	138	n/a	9/17/2020	190	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-17	138	n/a	9/16/2020	277	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-18	138	n/a	9/15/2020	430	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	9/18/2020	288	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	9/17/2020	108	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	9/17/2020	99.3	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	9/16/2020	156	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	9/15/2020	150	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.84	4.9	9/18/2020	4.88	Yes	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-15	7.84	4.9	9/17/2020	6.11	No	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-16	7.84	4.9	9/17/2020	7.11	No	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-17	7.84	4.9	9/16/2020	6.35	No	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.84	4.9	9/15/2020	4.47	Yes	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-14	0.59	n/a	9/18/2020	0.1ND	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-15	0.59	n/a	9/17/2020	0.1ND	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-16	0.59	n/a	9/17/2020	0.1ND	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-17	0.59	n/a	9/16/2020	0.058J	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.59	n/a	9/15/2020	0.31	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	9/18/2020	1260	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	9/17/2020	416	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	9/17/2020	254	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	9/16/2020	467	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	9/15/2020	1080	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	417	n/a	9/18/2020	2440	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	417	n/a	9/17/2020	956	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	417	n/a	9/17/2020	804	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	417	n/a	9/16/2020	1220	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	417	n/a	9/15/2020	1890	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Trend Test Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/12/2021, 3:23 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-2 (bg)	0.002014	57	53	Yes	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-16	0.2698	66	53	Yes	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	13.93	76	53	Yes	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	32.12	56	53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3214	-70	-53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-103.3	-58	-53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	15.6	97	53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	17.37	65	53	Yes	15	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.222	-72	-68	Yes	18	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	1.825	55	53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-14	-210.6	-58	-53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.37	75	53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	87.15	76	53	Yes	15	6.667	n/a	n/a	0.01	NP

Trend Test Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/12/2021, 3:23 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	0.0006083	5	53	No	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-2 (bg)	0.002014	57	53	Yes	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-3 (bg)	-0.0007757	-29	-53	No	15	13.33	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-4 (bg)	-0.001371	-40	-53	No	15	6.667	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-5 (bg)	-0.0001134	-6	-53	No	15	13.33	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-6 (bg)	-0.0006759	-25	-53	No	15	6.667	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-14	-0.8111	-19	-53	No	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-15	0.1028	39	53	No	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-16	0.2698	66	53	Yes	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-17	0.2527	32	53	No	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-18	0.01622	2	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-1 (bg)	4.855	39	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-2 (bg)	0.02596	1	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-3 (bg)	2.796	35	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-4 (bg)	-7.835	-41	-53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-5 (bg)	-0.484	-14	-53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-6 (bg)	0.2411	11	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-14	0	1	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	13.06	43	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	13.93	76	53	Yes	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	32.12	56	53	Yes	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-18	16.15	37	53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-1 (bg)	1.697	30	53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-2 (bg)	-0.238	-41	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-3 (bg)	-0.04784	-14	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3214	-70	-53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-5 (bg)	-0.06309	-20	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-6 (bg)	-0.08277	-31	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-103.3	-58	-53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-15	-23.36	-41	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	15.6	97	53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	17.37	65	53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-18	-31.78	-45	-53	No	15	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-1 (bg)	-0.03213	-41	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-2 (bg)	-0.05778	-45	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-3 (bg)	-0.00841	-13	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.222	-72	-68	Yes	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-5 (bg)	-0.0438	-52	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-6 (bg)	-0.03342	-41	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-14	0.04798	59	68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-18	-0.03586	-59	-68	No	18	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-1 (bg)	6.275	40	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-2 (bg)	1.235	49	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	1.825	55	53	Yes	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-4 (bg)	-0.7339	-49	-53	No	15	20	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-5 (bg)	-0.1282	-8	-53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-6 (bg)	0.2987	14	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-14	79.93	26	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-15	16.46	12	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-16	4.008	35	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-17	24.83	46	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-18	33.39	42	53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	11.02	13	53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-3.989	-24	-53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	0	-1	-53	No	15	0	n/a	n/a	0.01	NP

Trend Test Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/12/2021, 3:23 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>
Total Dissolved Solids (mg/L)	HGWA-4 (bg)	-29.52	-46	-53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-5 (bg)	-7.087	-35	-53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-6 (bg)	1.347	6	53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-14	-210.6	-58	-53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-15	-45.11	-28	-53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.37	75	53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	87.15	76	53	Yes	15	6.667	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-18	-4.279	-6	-53	No	15	0	n/a	n/a	0.01	NP

Tolerance Limit Summary Table

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/7/2021, 11:48 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	n/a	0.005	108	n/a	n/a	80.56	n/a	n/a	0.003928	NP Inter(NDs)
Barium (mg/L)	n/a	0.38	108	n/a	n/a	0	n/a	n/a	0.003928	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	96	n/a	n/a	84.38	n/a	n/a	0.007269	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	108	n/a	n/a	92.59	n/a	n/a	0.003928	NP Inter(NDs)
Chromium (mg/L)	n/a	0.019	96	n/a	n/a	85.42	n/a	n/a	0.007269	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	108	n/a	n/a	69.44	n/a	n/a	0.003928	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	4.36	108	n/a	n/a	0	n/a	n/a	0.003928	NP Inter(n>table)
Fluoride (mg/L)	n/a	0.59	114	n/a	n/a	34.21	n/a	n/a	0.002887	NP Inter(normality)
Lead (mg/L)	n/a	0.005	96	n/a	n/a	73.96	n/a	n/a	0.007269	NP Inter(normality)
Lithium (mg/L)	n/a	0.03	108	n/a	n/a	25	n/a	n/a	0.003928	NP Inter(normality)
Molybdenum (mg/L)	n/a	0.01	96	n/a	n/a	92.71	n/a	n/a	0.007269	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	108	n/a	n/a	99.07	n/a	n/a	0.003928	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	108	n/a	n/a	98.15	n/a	n/a	0.003928	NP Inter(NDs)

PLANT HAMMOND AP-2 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.38	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.59	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.01
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

PLANT HAMMOND AP-2 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.38	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.59	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

State Confidence Interval Summary Table - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:05 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1939	0.166	0.038	Yes 17	0.1799	0.02222	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-33	0.06274	0.04226	0.038	Yes 4	0.0525	0.004509	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-21D	0.04096	0.01647	0.01	Yes 7	0.02871	0.01031	0	None	No	0.01	Param.

State Confidence Interval Summary Table - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:05 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.005911	0.003875	0.01	No 17	0.004893	0.001625	11.76	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 17	0.004196	0.001793	82.35	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 17	0.004218	0.001751	82.35	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.00097	0.01	No 17	0.00401	0.001841	76.47	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-18	0.006952	0.004571	0.01	No 17	0.005761	0.0019	0	None	No	0.01	Param.
Arsenic (mg/L)	MW-21D	0.005	0.00019	0.01	No 7	0.003784	0.002101	71.43	None	No	0.008	NP (normality)
Arsenic (mg/L)	MW-22	0.005	0.00045	0.01	No 6	0.004242	0.001858	83.33	None	No	0.0155	NP (NDs)
Arsenic (mg/L)	MW-23D	0.005	0.00082	0.01	No 6	0.004303	0.001706	83.33	None	No	0.0155	NP (NDs)
Barium (mg/L)	HGWC-14	0.0228	0.019	2	No 17	0.02541	0.01933	5.882	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.02996	0.02094	2	No 17	0.02545	0.007195	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1126	0.09875	2	No 17	0.1057	0.01103	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0225	2	No 17	0.02485	0.002467	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0339	0.028	2	No 17	0.03448	0.01724	5.882	None	No	0.01	NP (normality)
Barium (mg/L)	MW-21D	0.08189	0.04897	2	No 7	0.06543	0.01385	0	None	No	0.01	Param.
Barium (mg/L)	MW-22	0.04182	0.01818	2	No 6	0.03	0.008602	0	None	No	0.01	Param.
Barium (mg/L)	MW-23D	0.0767	0.05403	2	No 6	0.06483	0.008886	0	None	ln(x)	0.01	Param.
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 15	0.0008087	0.0008931	13.33	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.00338	0.002858	0.004	No 15	0.003119	0.0003852	6.667	None	No	0.01	Param.
Beryllium (mg/L)	MW-21D	0.003	0.003	0.004	No 7	0.003	0	100	None	No	0.008	NP (NDs)
Beryllium (mg/L)	MW-22	0.003	0.000047	0.004	No 6	0.002508	0.001206	83.33	None	No	0.0155	NP (NDs)
Beryllium (mg/L)	MW-23D	0.003	0.003	0.004	No 6	0.003	0	100	None	No	0.0155	NP (NDs)
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 17	0.001102	0.001206	41.18	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002362	0.001631	0.005	No 17	0.00203	0.0006666	0	None	x^(1/3)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 17	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 17	0.002357	0.0005894	94.12	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002434	0.002048	0.005	No 17	0.002241	0.0003083	5.882	None	No	0.01	Param.
Cadmium (mg/L)	MW-21D	0.0025	0.0025	0.005	No 7	0.0025	0	100	None	No	0.008	NP (NDs)
Cadmium (mg/L)	MW-22	0.002382	0.0006048	0.005	No 6	0.001493	0.0006468	0	None	No	0.01	Param.
Cadmium (mg/L)	MW-23D	0.0025	0.0006	0.005	No 6	0.002183	0.0007757	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 15	0.008739	0.003329	86.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 15	0.008727	0.003359	86.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 15	0.008214	0.003713	80	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 15	0.009453	0.002117	93.33	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.00063	0.1	No 15	0.008102	0.003929	80	None	No	0.01	NP (NDs)
Chromium (mg/L)	MW-21D	0.01	0.00057	0.1	No 7	0.008653	0.003564	85.71	None	No	0.008	NP (NDs)
Chromium (mg/L)	MW-22	0.01	0.0004	0.1	No 6	0.0084	0.003919	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	MW-23D	0.01	0.00086	0.1	No 6	0.008477	0.003731	83.33	None	No	0.0155	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02792	0.0236	0.038	No 17	0.02498	0.005733	5.882	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.04931	0.03241	0.038	No 17	0.04086	0.01348	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 17	0.00445	0.001553	88.24	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01639	0.01485	0.038	No 17	0.01562	0.001225	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1939	0.166	0.038	Yes 17	0.1799	0.02222	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-21D	0.005	0.00034	0.038	No 7	0.004334	0.001761	85.71	None	No	0.008	NP (NDs)
Cobalt (mg/L)	MW-22	0.04075	0.01992	0.038	No 6	0.03033	0.007581	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-23D	0.001284	0.0009289	0.038	No 6	0.001107	0.0001294	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-33	0.06274	0.04226	0.038	Yes 4	0.0525	0.004509	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.67	1.194	5	No 17	1.432	0.3802	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.8752	0.4315	5	No 17	0.6534	0.3541	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.057	0.5518	5	No 17	0.8044	0.4031	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.078	0.6489	5	No 17	0.8635	0.3425	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.358	1.808	5	No 17	2.083	0.4391	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-21D	1.422	0.4539	5	No 7	0.9056	0.483	0	None	x^(1/3)	0.01	Param.

State Confidence Interval Summary Table - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:05 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Combined Radium 226 + 228 (pCi/L)	MW-22	1.51	0.2891	5	No 6	0.8995	0.4443	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-23D	1.293	0.4581	5	No 6	0.8753	0.3038	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.28	0.092	4	No 18	0.1992	0.1654	22.22	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-15	0.22	0.09	4	No 18	0.1533	0.1291	38.89	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-16	0.26	0.059	4	No 18	0.1632	0.1277	50	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-17	0.23	0.07	4	No 18	0.1877	0.227	38.89	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-18	0.6582	0.3974	4	No 18	0.5278	0.2155	5.556	None	No	0.01	Param.
Fluoride (mg/L)	MW-21D	0.1	0.1	4	No 7	0.1	5.6e-10	85.71	None	No	0.008	NP (NDs)
Fluoride (mg/L)	MW-22	0.28	0.1	4	No 6	0.135	0.07204	66.67	None	No	0.0155	NP (normality)
Fluoride (mg/L)	MW-23D	0.16	0.1	4	No 6	0.1167	0.02658	66.67	None	No	0.0155	NP (normality)
Fluoride (mg/L)	MW-33	0.2928	0.06724	4	No 4	0.18	0.04967	0	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0013	0.005	No 15	0.001808	0.0009153	6.667	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.005	No 15	0.003428	0.002311	66.67	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.005	No 15	0.002725	0.002518	53.33	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000077	0.005	No 15	0.003036	0.00249	60	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.005	No 15	0.001629	0.000948	6.667	None	No	0.01	NP (normality)
Lead (mg/L)	MW-21D	0.005	0.000047	0.005	No 7	0.003585	0.002417	71.43	None	No	0.008	NP (normality)
Lead (mg/L)	MW-22	0.005	0.000094	0.005	No 6	0.003366	0.002532	66.67	None	No	0.0155	NP (normality)
Lead (mg/L)	MW-23D	0.005	0.000051	0.005	No 6	0.003368	0.002528	66.67	None	No	0.0155	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.03	No 17	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0016	0.03	No 17	0.01284	0.01329	35.29	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0043	0.0028	0.03	No 17	0.004924	0.006495	5.882	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.03	No 17	0.01808	0.01469	58.82	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01487	0.01242	0.03	No 17	0.01365	0.001953	0	None	No	0.01	Param.
Lithium (mg/L)	MW-21D	0.02655	0.02059	0.03	No 7	0.02357	0.002507	0	None	No	0.01	Param.
Lithium (mg/L)	MW-22	0.001842	0.001025	0.03	No 6	0.001417	0.0003125	0	None	sqrt(x)	0.01	Param.
Lithium (mg/L)	MW-23D	0.002732	0.002001	0.03	No 6	0.002367	0.0002658	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.01	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.01	No 15	0.00938	0.002401	93.33	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.01	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.01	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.01	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	MW-21D	0.04096	0.01647	0.01	Yes 7	0.02871	0.01031	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-22	0.01	0.00013	0.01	No 6	0.008355	0.004029	83.33	None	No	0.0155	NP (NDs)
Molybdenum (mg/L)	MW-23D	0.01	0.0014	0.01	No 6	0.003783	0.003109	16.67	None	No	0.0155	NP (Cohens/xfrm)
Selenium (mg/L)	HGWC-14	0.01374	0.006587	0.05	No 17	0.01017	0.005711	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0041	0.05	No 17	0.008065	0.003666	76.47	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No 17	0.009417	0.002404	94.12	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No 17	0.008458	0.003455	82.35	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03589	0.01809	0.05	No 17	0.02699	0.0142	5.882	None	No	0.01	Param.
Selenium (mg/L)	MW-21D	0.01	0.01	0.05	No 7	0.01	0	100	None	No	0.008	NP (NDs)
Selenium (mg/L)	MW-22	0.01	0.002	0.05	No 6	0.008667	0.003266	83.33	None	No	0.0155	NP (NDs)
Selenium (mg/L)	MW-23D	0.01	0.01	0.05	No 6	0.01	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No 17	0.0002968	0.00002922	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No 17	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No 17	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No 17	0.0006353	0.0004494	58.82	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No 17	0.00051	0.0004231	41.18	None	No	0.01	NP (normality)
Thallium (mg/L)	MW-21D	0.001	0.001	0.002	No 7	0.001	0	100	None	No	0.008	NP (NDs)
Thallium (mg/L)	MW-22	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	MW-23D	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)

Federal Confidence Interval Summary Table - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:08 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1939	0.166	0.038	Yes 17	0.1799	0.02222	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-33	0.06274	0.04226	0.038	Yes 4	0.0525	0.004509	0	None	No	0.01	Param.

Federal Confidence Interval Summary Table - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:08 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.005911	0.003875	0.01	No 17	0.004893	0.001625	11.76	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 17	0.004196	0.001793	82.35	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 17	0.004218	0.001751	82.35	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.00097	0.01	No 17	0.00401	0.001841	76.47	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-18	0.006952	0.004571	0.01	No 17	0.005761	0.0019	0	None	No	0.01	Param.
Arsenic (mg/L)	MW-21D	0.005	0.00019	0.01	No 7	0.003784	0.002101	71.43	None	No	0.008	NP (normality)
Arsenic (mg/L)	MW-22	0.005	0.00045	0.01	No 6	0.004242	0.001858	83.33	None	No	0.0155	NP (NDs)
Arsenic (mg/L)	MW-23D	0.005	0.00082	0.01	No 6	0.004303	0.001706	83.33	None	No	0.0155	NP (NDs)
Barium (mg/L)	HGWC-14	0.0228	0.019	2	No 17	0.02541	0.01933	5.882	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.02996	0.02094	2	No 17	0.02545	0.007195	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1126	0.09875	2	No 17	0.1057	0.01103	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0225	2	No 17	0.02485	0.002467	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0339	0.028	2	No 17	0.03448	0.01724	5.882	None	No	0.01	NP (normality)
Barium (mg/L)	MW-21D	0.08189	0.04897	2	No 7	0.06543	0.01385	0	None	No	0.01	Param.
Barium (mg/L)	MW-22	0.04182	0.01818	2	No 6	0.03	0.008602	0	None	No	0.01	Param.
Barium (mg/L)	MW-23D	0.0767	0.05403	2	No 6	0.06483	0.008886	0	None	ln(x)	0.01	Param.
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 15	0.0008087	0.0008931	13.33	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.00338	0.002858	0.004	No 15	0.003119	0.0003852	6.667	None	No	0.01	Param.
Beryllium (mg/L)	MW-21D	0.003	0.003	0.004	No 7	0.003	0	100	None	No	0.008	NP (NDs)
Beryllium (mg/L)	MW-22	0.003	0.000047	0.004	No 6	0.002508	0.001206	83.33	None	No	0.0155	NP (NDs)
Beryllium (mg/L)	MW-23D	0.003	0.003	0.004	No 6	0.003	0	100	None	No	0.0155	NP (NDs)
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 17	0.001102	0.001206	41.18	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002362	0.001631	0.005	No 17	0.00203	0.0006666	0	None	x^(1/3)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 17	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 17	0.002357	0.0005894	94.12	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002434	0.002048	0.005	No 17	0.002241	0.0003083	5.882	None	No	0.01	Param.
Cadmium (mg/L)	MW-21D	0.0025	0.0025	0.005	No 7	0.0025	0	100	None	No	0.008	NP (NDs)
Cadmium (mg/L)	MW-22	0.002382	0.0006048	0.005	No 6	0.001493	0.0006468	0	None	No	0.01	Param.
Cadmium (mg/L)	MW-23D	0.0025	0.0006	0.005	No 6	0.002183	0.0007757	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 15	0.008739	0.003329	86.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 15	0.008727	0.003359	86.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 15	0.008214	0.003713	80	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 15	0.009453	0.002117	93.33	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.00063	0.1	No 15	0.008102	0.003929	80	None	No	0.01	NP (NDs)
Chromium (mg/L)	MW-21D	0.01	0.00057	0.1	No 7	0.008653	0.003564	85.71	None	No	0.008	NP (NDs)
Chromium (mg/L)	MW-22	0.01	0.0004	0.1	No 6	0.0084	0.003919	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	MW-23D	0.01	0.00086	0.1	No 6	0.008477	0.003731	83.33	None	No	0.0155	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02792	0.0236	0.038	No 17	0.02498	0.005733	5.882	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.04931	0.03241	0.038	No 17	0.04086	0.01348	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 17	0.00445	0.001553	88.24	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01639	0.01485	0.038	No 17	0.01562	0.001225	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1939	0.166	0.038	Yes 17	0.1799	0.02222	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-21D	0.005	0.00034	0.038	No 7	0.004334	0.001761	85.71	None	No	0.008	NP (NDs)
Cobalt (mg/L)	MW-22	0.04075	0.01992	0.038	No 6	0.03033	0.007581	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-23D	0.001284	0.0009289	0.038	No 6	0.001107	0.0001294	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-33	0.06274	0.04226	0.038	Yes 4	0.0525	0.004509	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.28	0.092	4	No 18	0.1992	0.1654	22.22	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-15	0.22	0.09	4	No 18	0.1533	0.1291	38.89	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-16	0.26	0.059	4	No 18	0.1632	0.1277	50	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-17	0.23	0.07	4	No 18	0.1877	0.227	38.89	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-18	0.6582	0.3974	4	No 18	0.5278	0.2155	5.556	None	No	0.01	Param.
Fluoride (mg/L)	MW-21D	0.1	0.1	4	No 7	0.1	5.6e-10	85.71	None	No	0.008	NP (NDs)

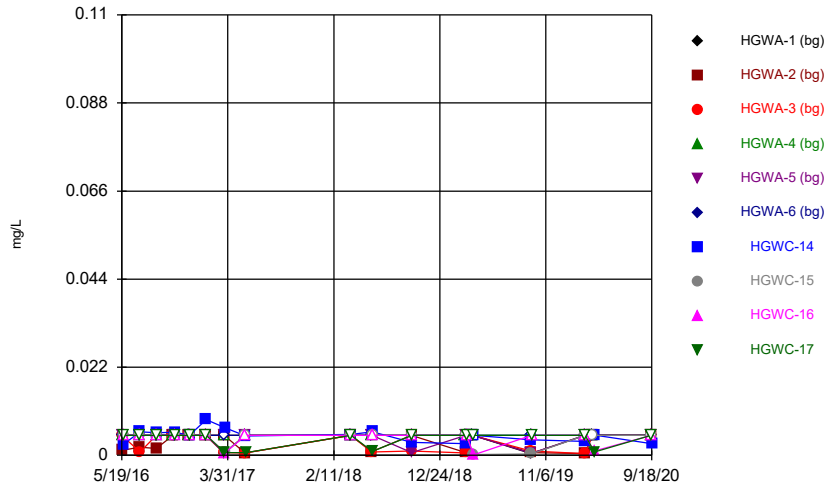
Federal Confidence Interval Summary Table - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:08 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Fluoride (mg/L)	MW-22	0.28	0.1	4	No 6	0.135	0.07204	66.67	None	No	0.0155	NP (normality)
Fluoride (mg/L)	MW-23D	0.16	0.1	4	No 6	0.1167	0.02658	66.67	None	No	0.0155	NP (normality)
Fluoride (mg/L)	MW-33	0.2928	0.06724	4	No 4	0.18	0.04967	0	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0013	0.015	No 15	0.001808	0.0009153	6.667	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.015	No 15	0.003428	0.002311	66.67	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.015	No 15	0.002725	0.002518	53.33	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000077	0.015	No 15	0.003036	0.00249	60	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.015	No 15	0.001629	0.000948	6.667	None	No	0.01	NP (normality)
Lead (mg/L)	MW-21D	0.005	0.000047	0.015	No 7	0.003585	0.002417	71.43	None	No	0.008	NP (normality)
Lead (mg/L)	MW-22	0.005	0.000094	0.015	No 6	0.003366	0.002532	66.67	None	No	0.0155	NP (normality)
Lead (mg/L)	MW-23D	0.005	0.000051	0.015	No 6	0.003368	0.002528	66.67	None	No	0.0155	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.03	No 17	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0016	0.03	No 17	0.01284	0.01329	35.29	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0043	0.0028	0.03	No 17	0.004924	0.006495	5.882	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.03	No 17	0.01808	0.01469	58.82	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01487	0.01242	0.03	No 17	0.01365	0.001953	0	None	No	0.01	Param.
Lithium (mg/L)	MW-21D	0.02655	0.02059	0.03	No 7	0.02357	0.002507	0	None	No	0.01	Param.
Lithium (mg/L)	MW-22	0.001842	0.001025	0.03	No 6	0.001417	0.0003125	0	None	sqrt(x)	0.01	Param.
Lithium (mg/L)	MW-23D	0.002732	0.002001	0.03	No 6	0.002367	0.0002658	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.1	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.1	No 15	0.00938	0.002401	93.33	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.1	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.1	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.1	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	MW-21D	0.04096	0.01647	0.1	No 7	0.02871	0.01031	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-22	0.01	0.00013	0.1	No 6	0.008355	0.004029	83.33	None	No	0.0155	NP (NDs)
Molybdenum (mg/L)	MW-23D	0.01	0.0014	0.1	No 6	0.003783	0.003109	16.67	None	No	0.0155	NP (Cohens/xfrm)
Selenium (mg/L)	HGWC-14	0.01374	0.006587	0.05	No 17	0.01017	0.005711	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0041	0.05	No 17	0.008065	0.003666	76.47	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No 17	0.009417	0.002404	94.12	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No 17	0.008458	0.003455	82.35	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03589	0.01809	0.05	No 17	0.02699	0.0142	5.882	None	No	0.01	Param.
Selenium (mg/L)	MW-21D	0.01	0.01	0.05	No 7	0.01	0	100	None	No	0.008	NP (NDs)
Selenium (mg/L)	MW-22	0.01	0.002	0.05	No 6	0.008667	0.003266	83.33	None	No	0.0155	NP (NDs)
Selenium (mg/L)	MW-23D	0.01	0.01	0.05	No 6	0.01	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No 17	0.0002968	0.00002922	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No 17	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No 17	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No 17	0.0006353	0.0004494	58.82	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No 17	0.00051	0.0004231	41.18	None	No	0.01	NP (normality)
Thallium (mg/L)	MW-21D	0.001	0.001	0.002	No 7	0.001	0	100	None	No	0.008	NP (NDs)
Thallium (mg/L)	MW-22	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	MW-23D	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)

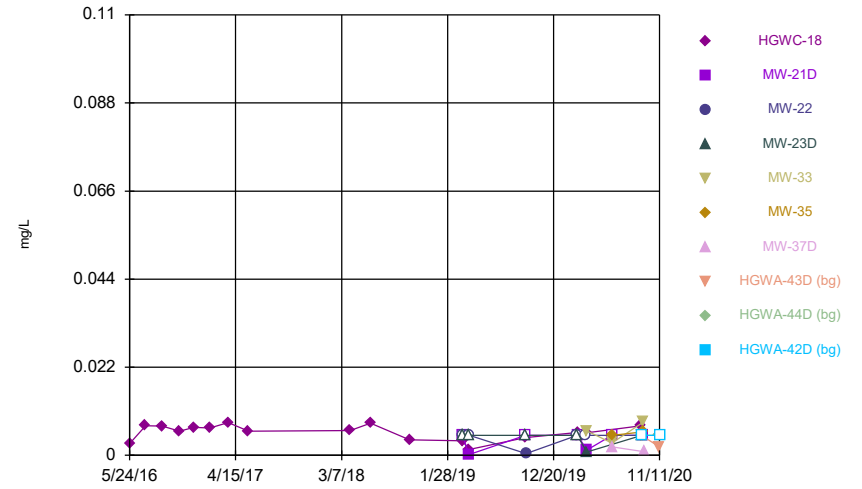
FIGURE A.

Time Series



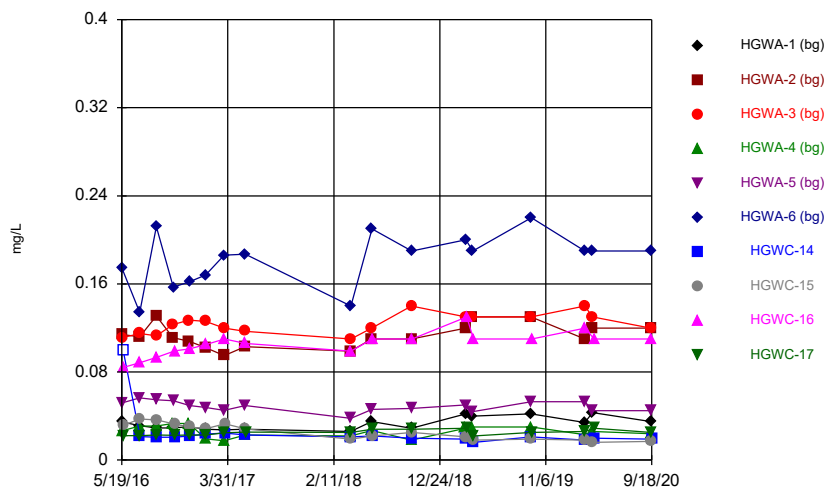
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



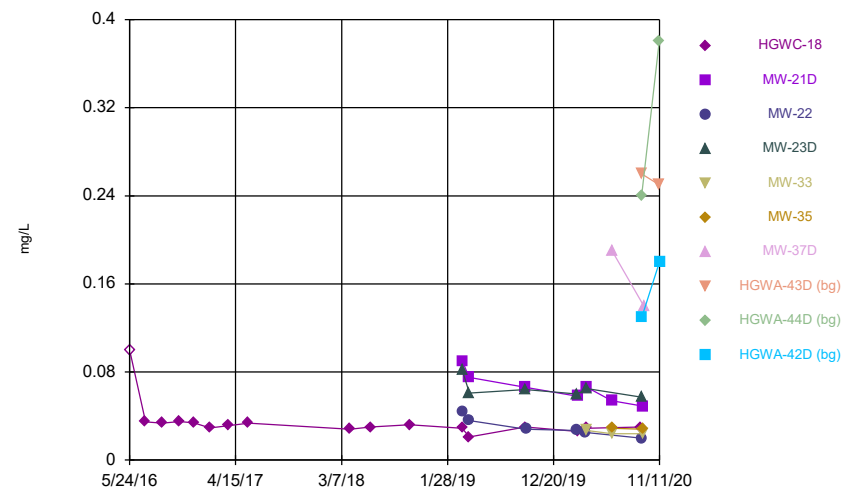
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



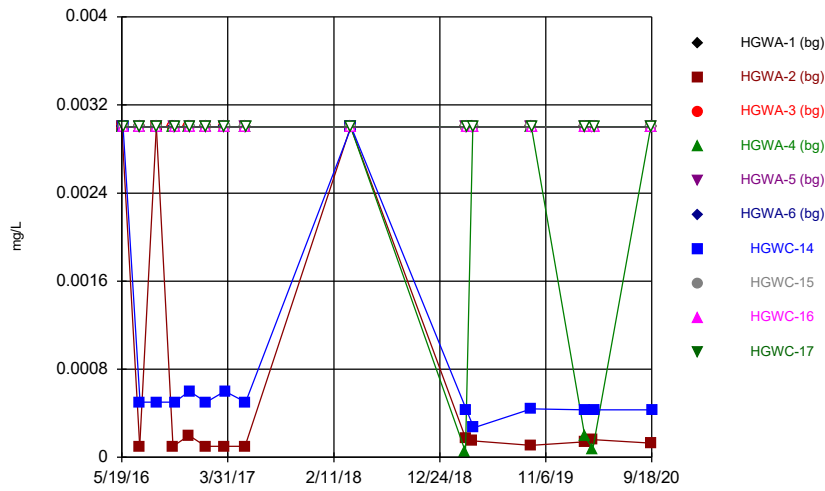
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Time Series



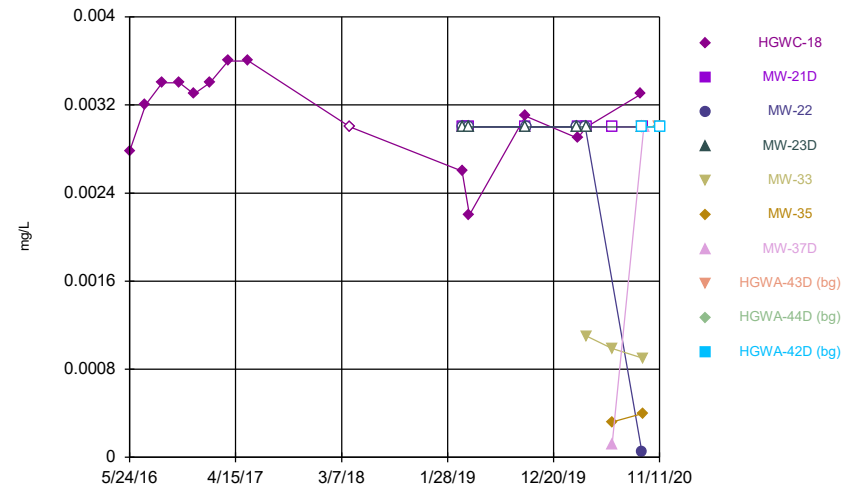
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Time Series



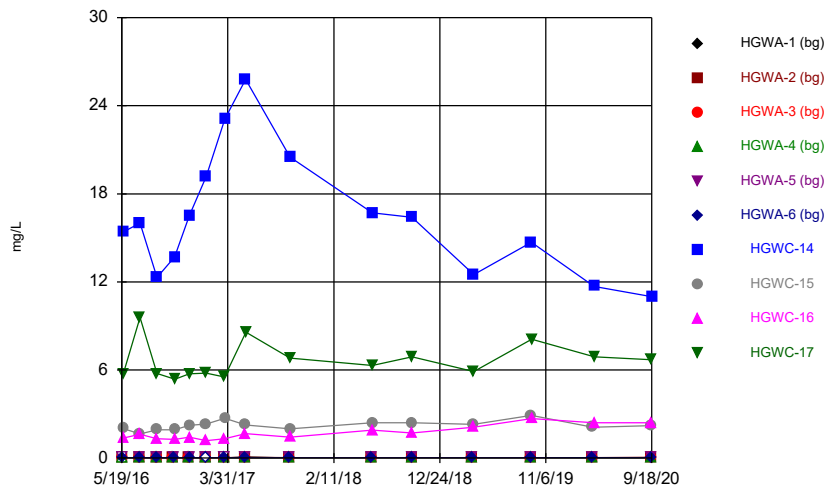
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Time Series



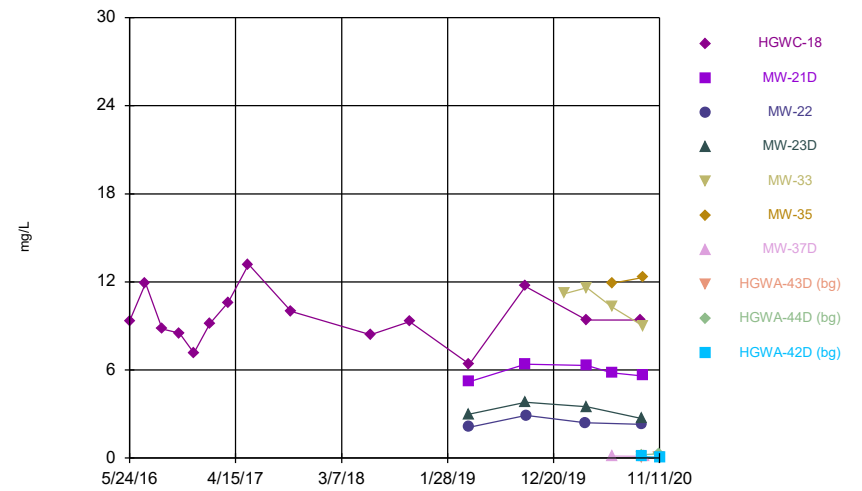
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Time Series



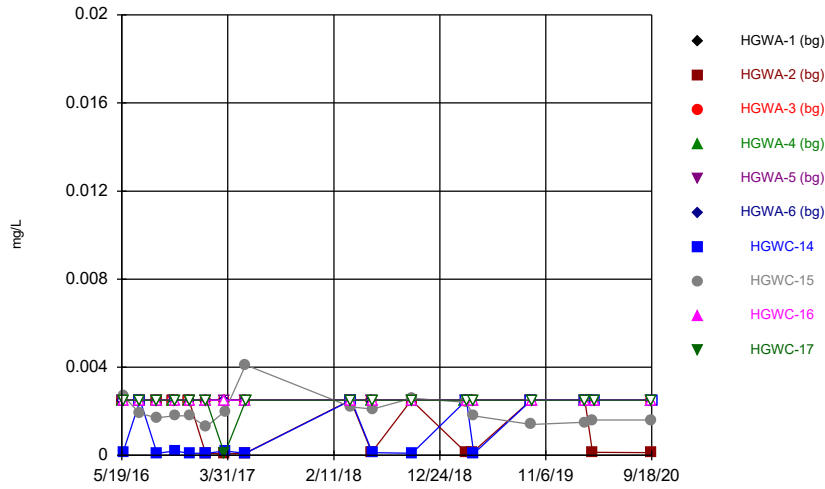
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



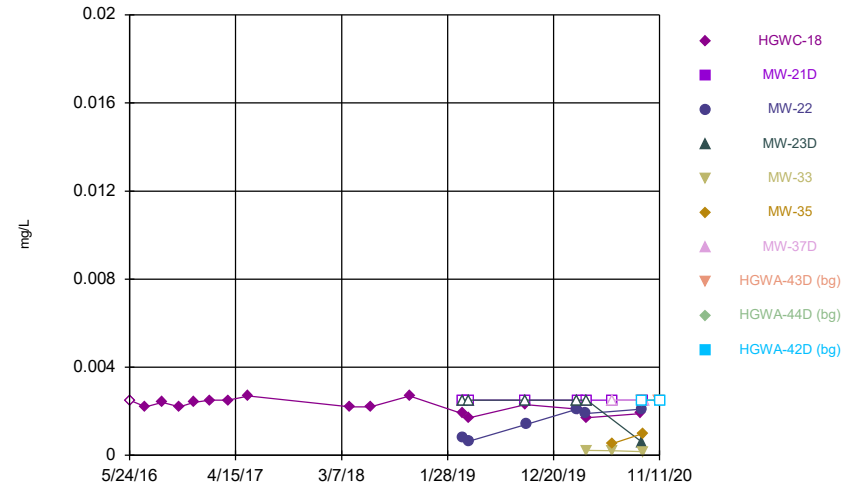
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Time Series



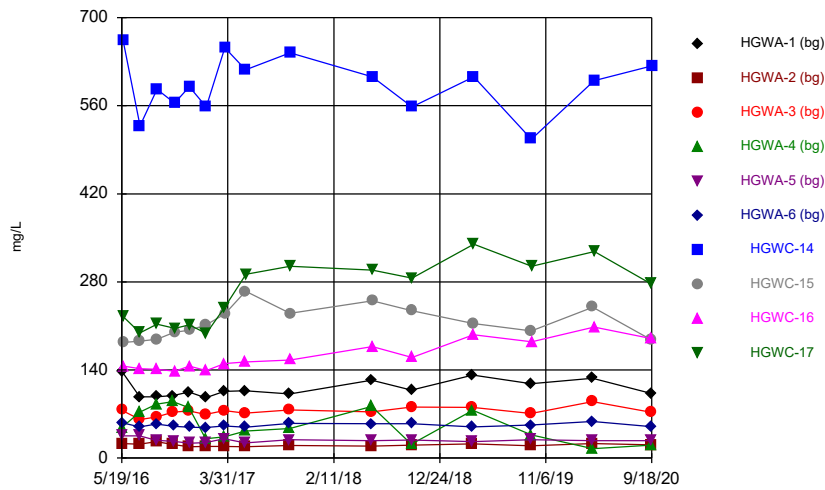
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



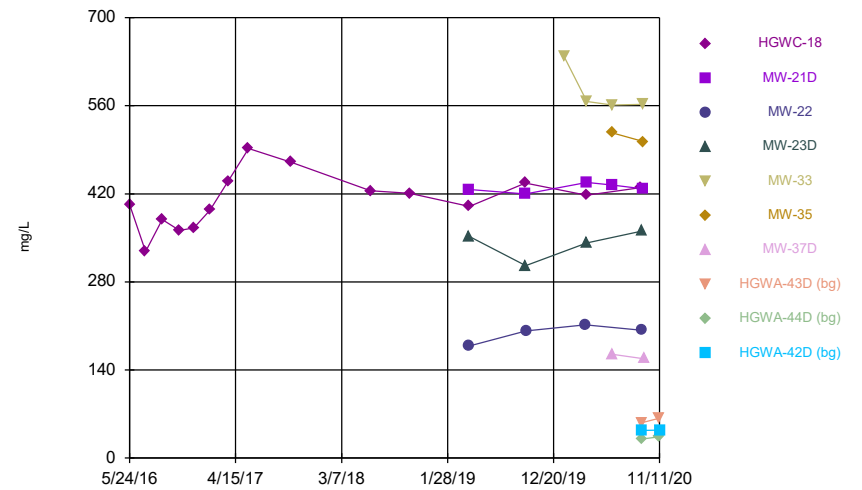
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



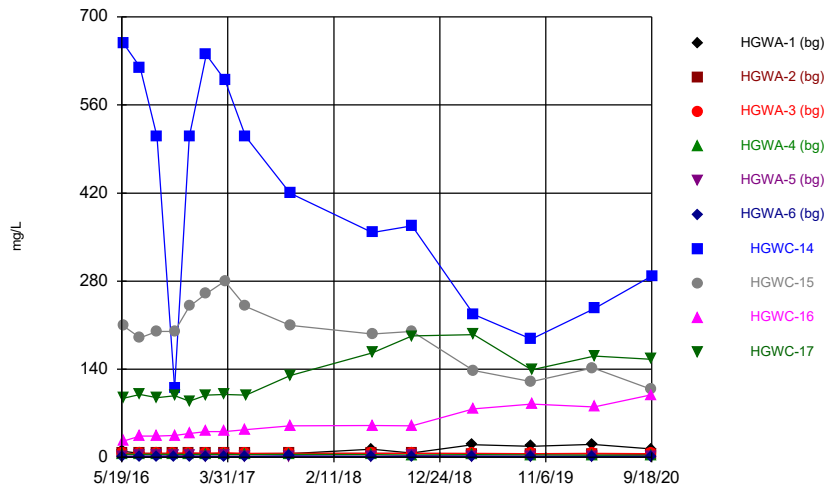
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



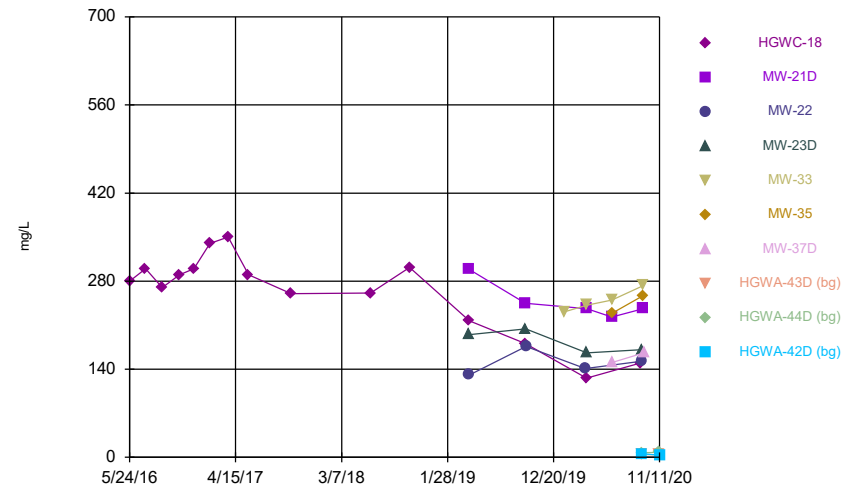
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



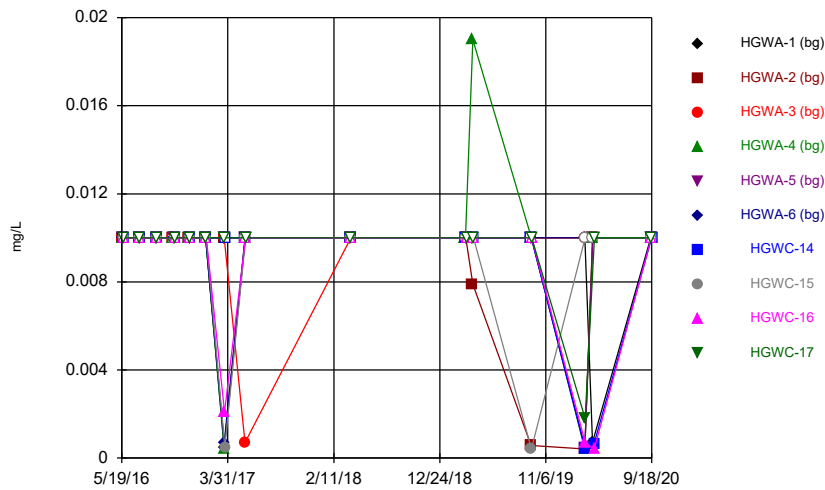
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Time Series



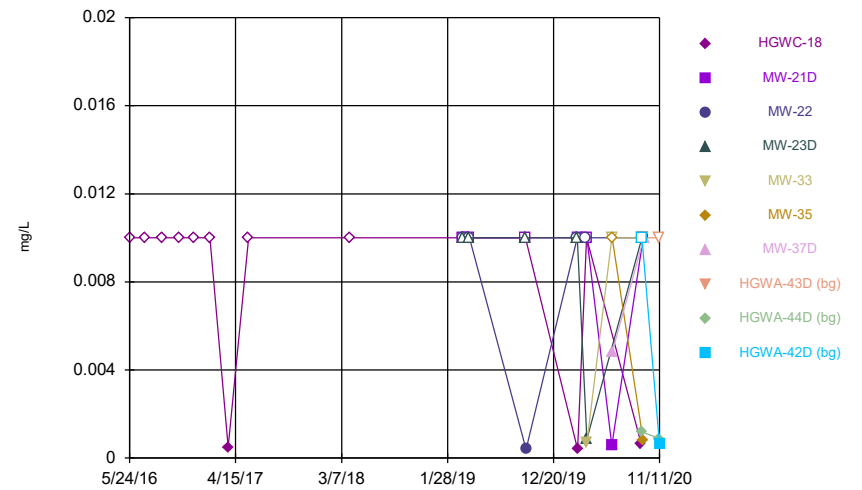
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Time Series



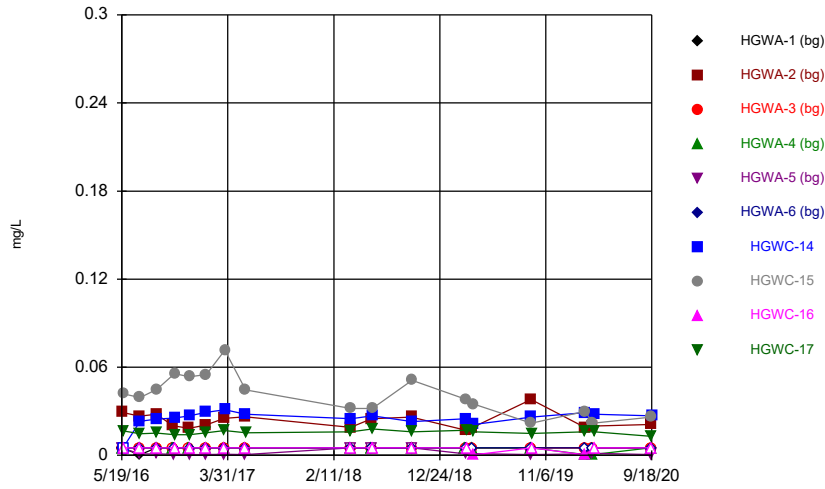
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



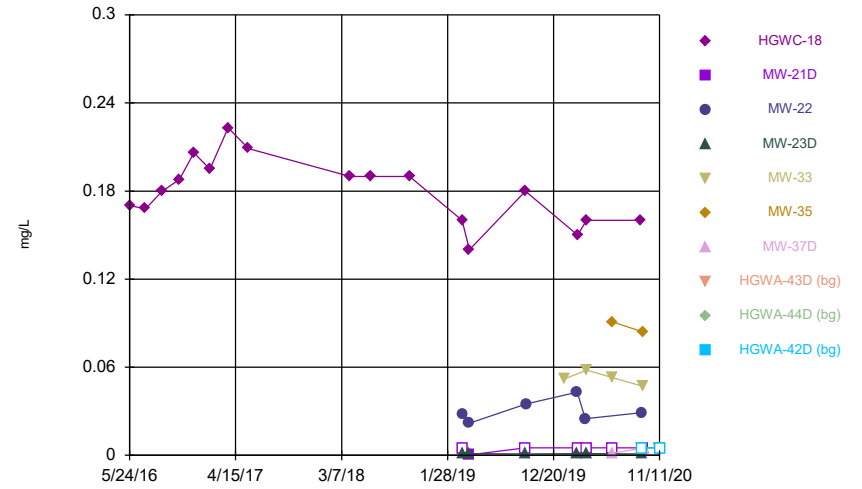
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



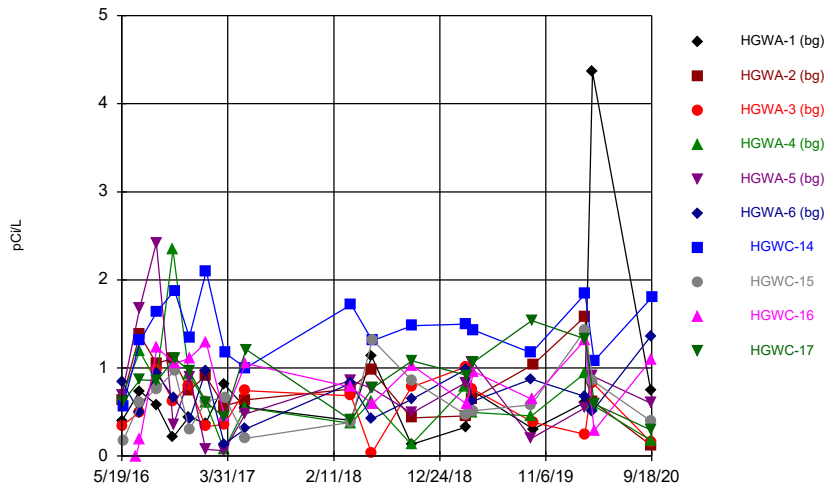
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



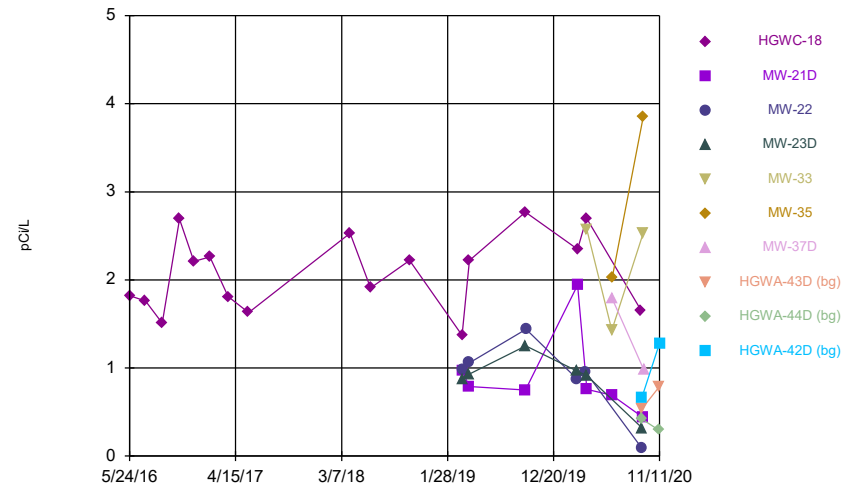
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Time Series



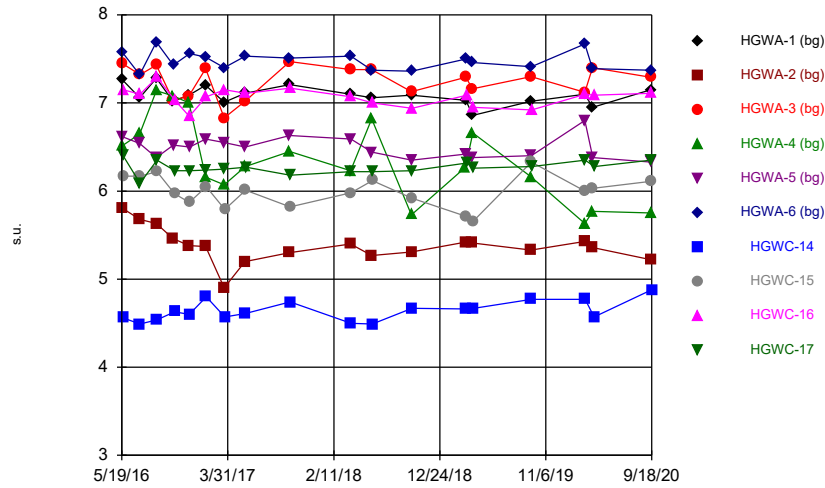
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



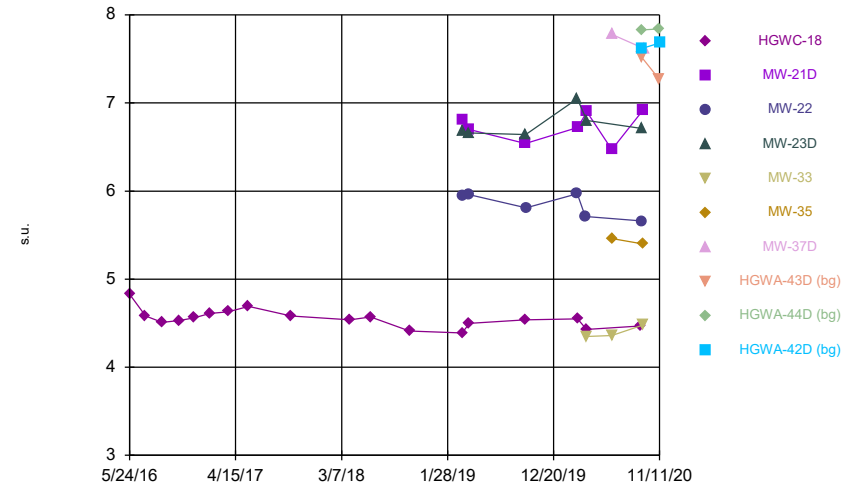
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Time Series



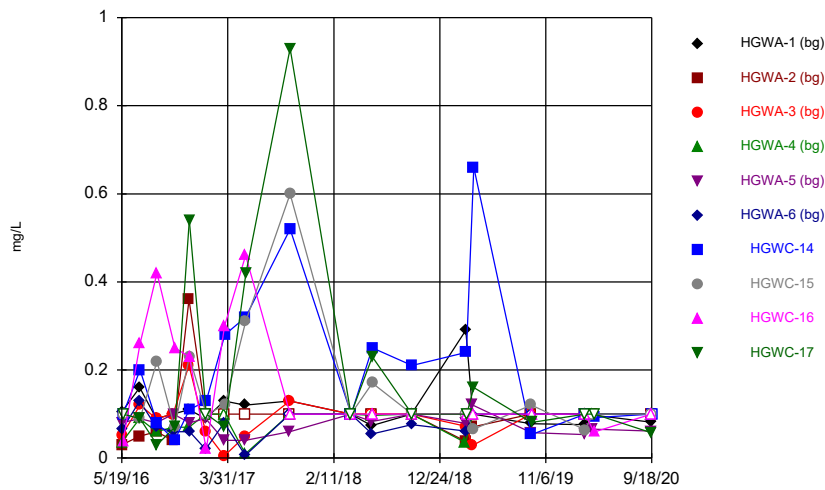
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Time Series



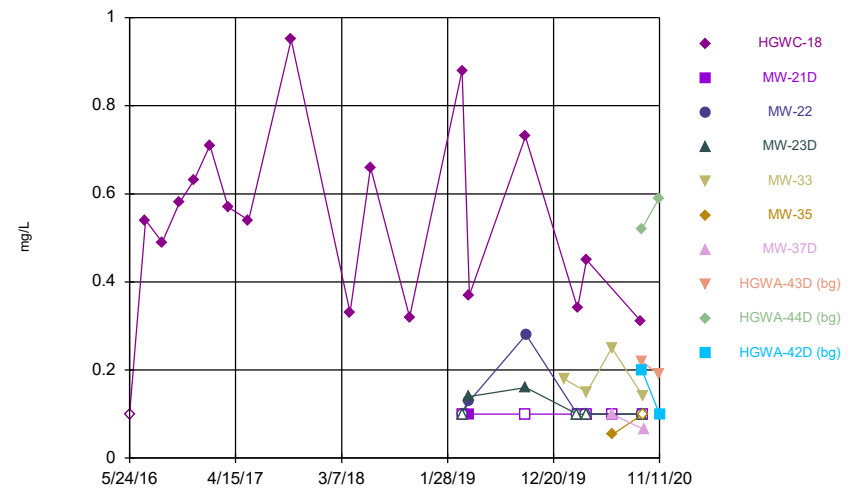
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Time Series



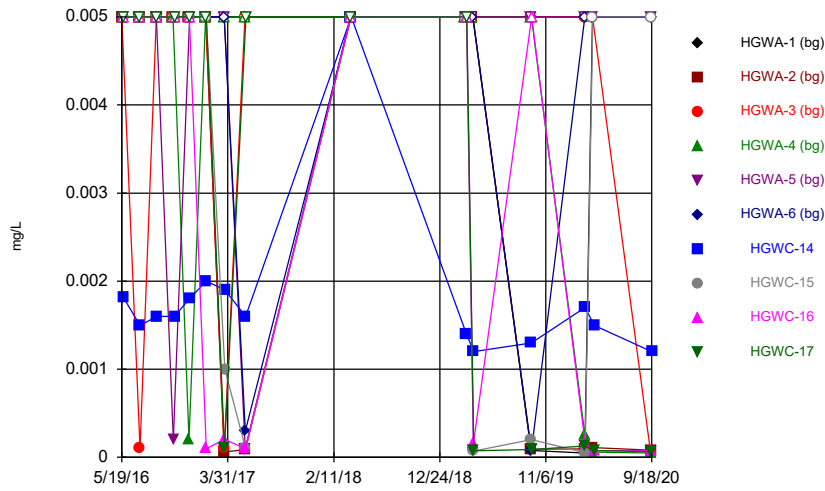
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Time Series



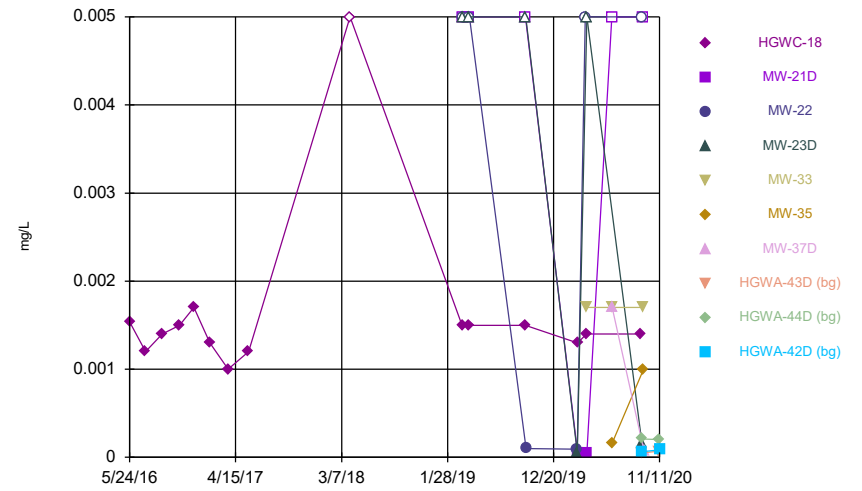
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Time Series



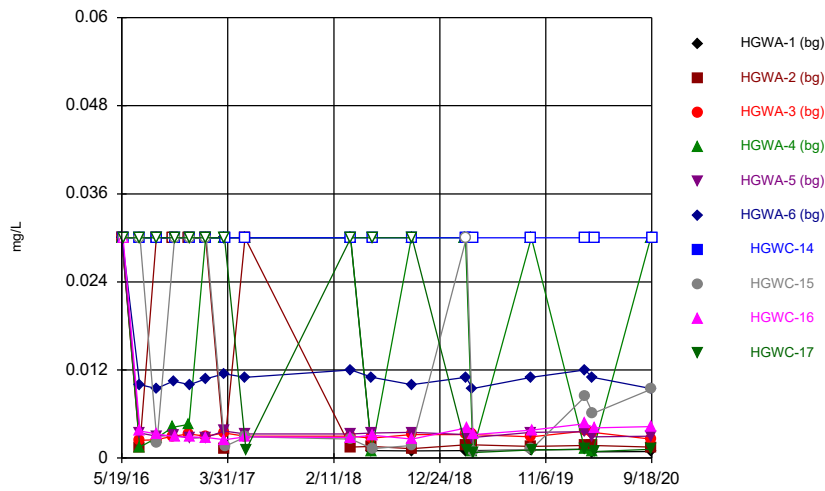
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Time Series



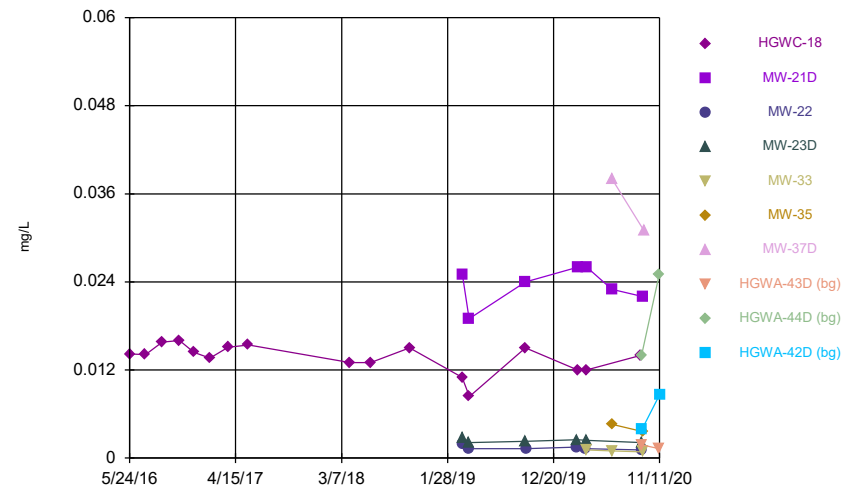
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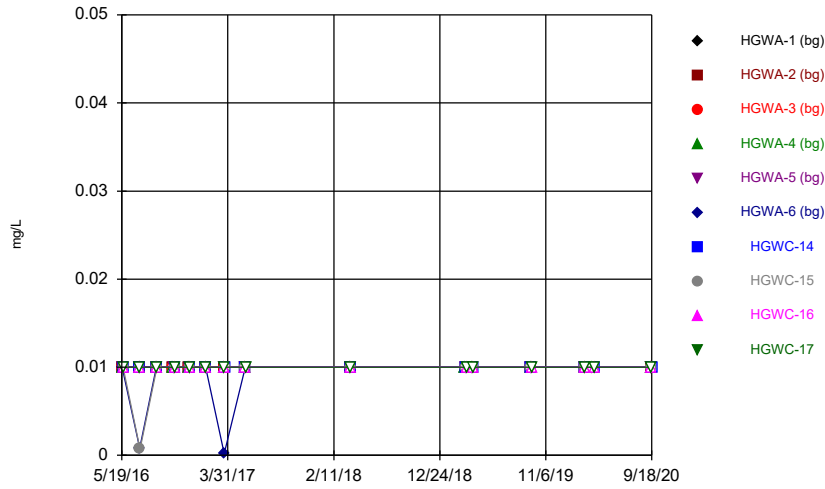
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Time Series



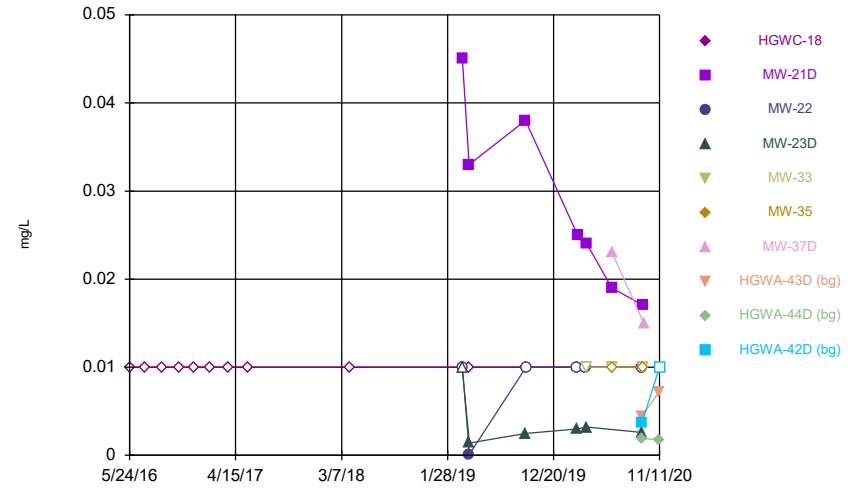
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



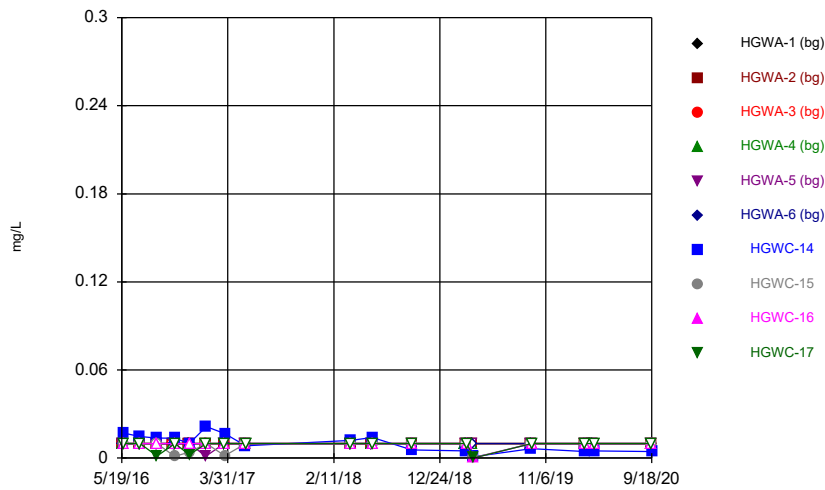
Constituent: Molybdenum Analysis Run 2/10/2021 3:17 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



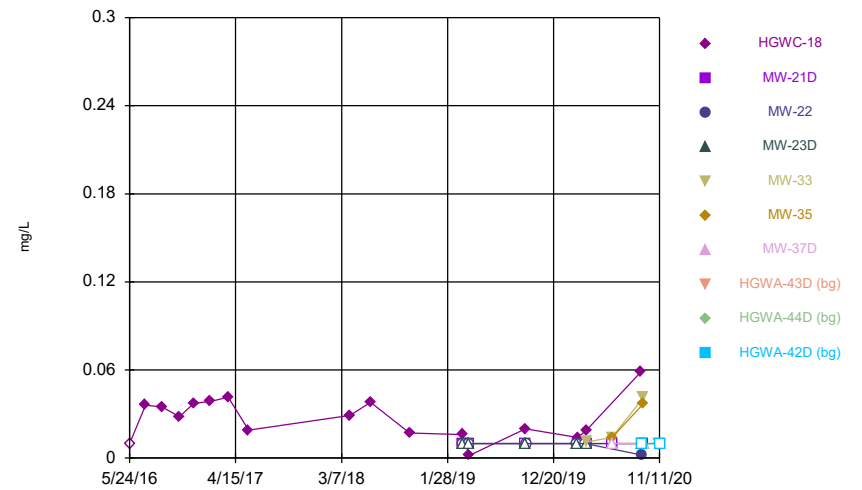
Constituent: Molybdenum Analysis Run 2/10/2021 3:17 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



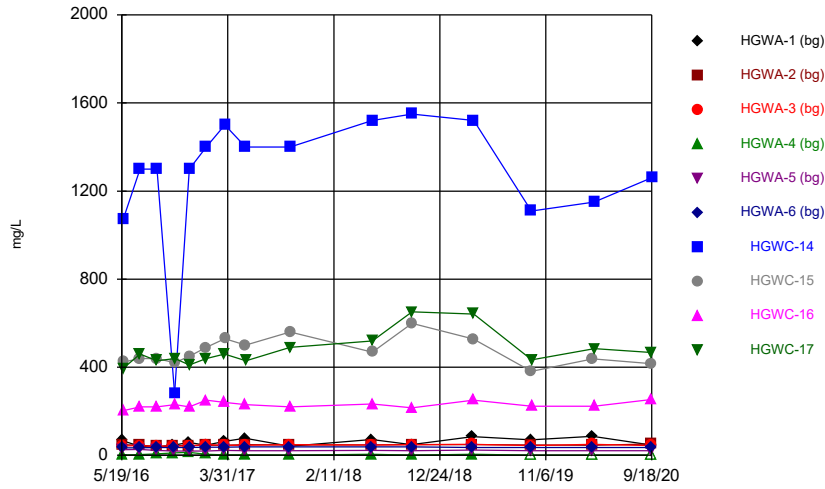
Constituent: Selenium Analysis Run 2/10/2021 3:17 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



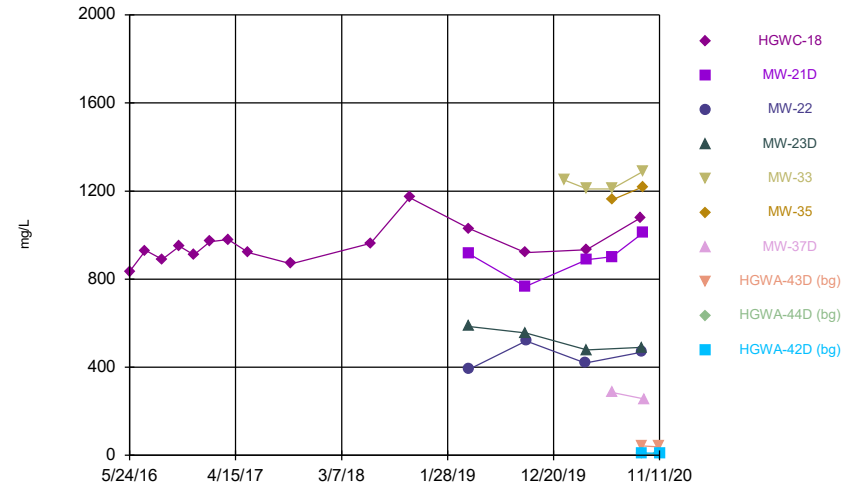
Constituent: Selenium Analysis Run 2/10/2021 3:17 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



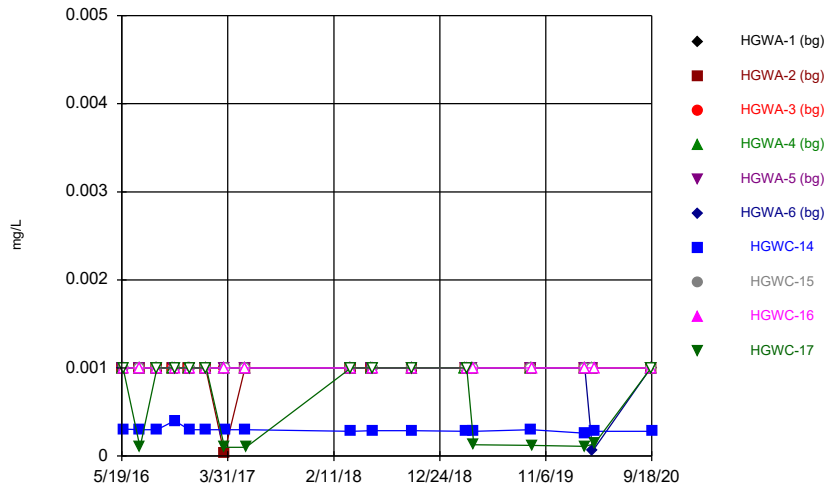
Constituent: Sulfate Analysis Run 2/10/2021 3:17 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



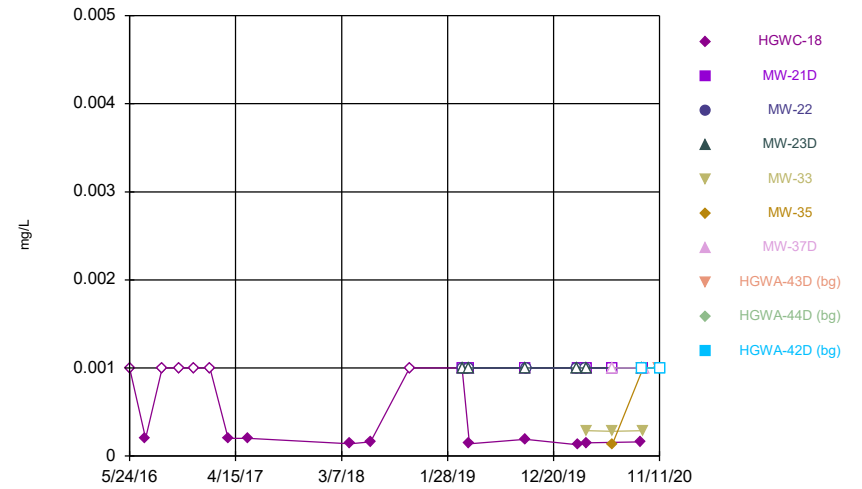
Constituent: Sulfate Analysis Run 2/10/2021 3:17 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



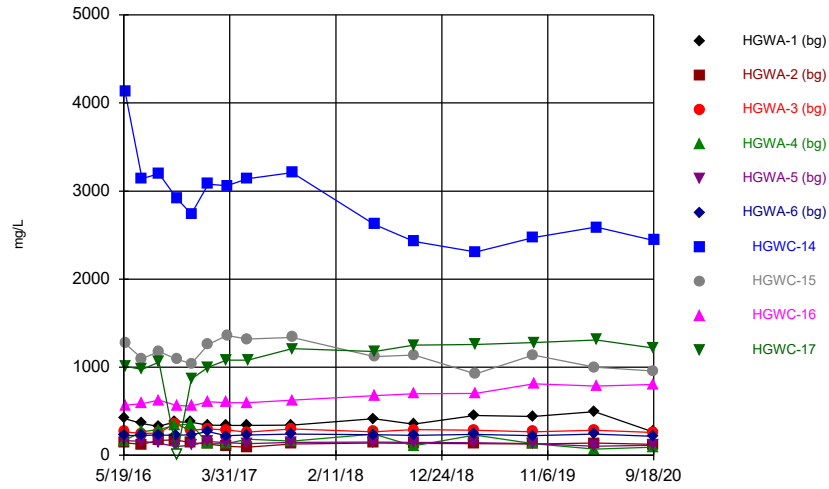
Constituent: Thallium Analysis Run 2/10/2021 3:17 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



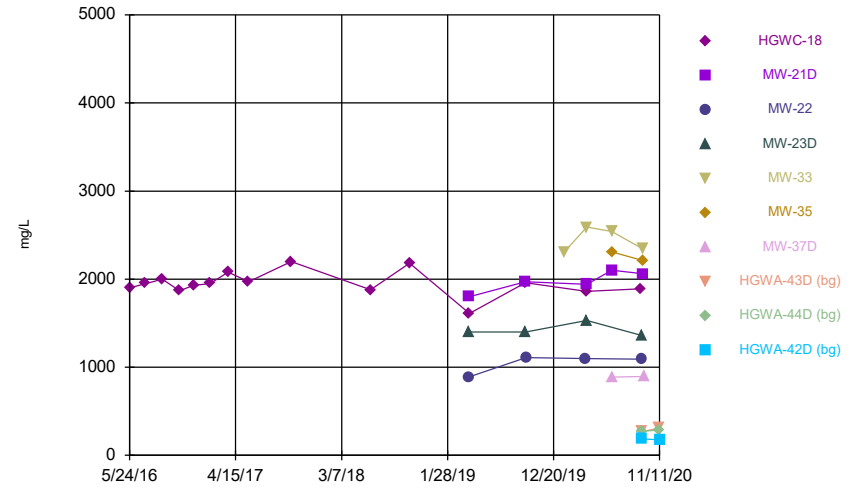
Constituent: Thallium Analysis Run 2/10/2021 3:17 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 2/10/2021 3:17 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 2/10/2021 3:17 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series

Constituent: Arsenic (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.005	0.00127 (J)	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
5/23/2016							0.00268 (J)	<0.005	<0.005
7/11/2016	<0.005	0.002 (J)		<0.005	<0.005	<0.005			
7/12/2016			0.0008 (J)				0.0059	<0.005	<0.005
8/30/2016	<0.005	0.0017 (J)	<0.005	<0.005	<0.005	<0.005			
9/1/2016							0.0056	<0.005	<0.005
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					<0.005	<0.005			
10/24/2016							0.0058	<0.005	
10/25/2016									<0.005
12/6/2016	<0.005	<0.005	<0.005	<0.005					
12/7/2016							<0.005	<0.005	<0.005
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
1/26/2017							0.0089	<0.005	<0.005
3/21/2017	0.0005 (J)	<0.005	0.0007 (J)	<0.005	<0.005	<0.005			
3/22/2017									0.0005 (J)
3/23/2017							0.0069	0.0008 (J)	
5/22/2017	<0.005	0.0006 (J)	0.0006 (J)						
5/23/2017				<0.005	<0.005	<0.005			
5/24/2017							0.0048 (J)	<0.005	<0.005
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005		<0.005	<0.005
4/4/2018							0.0052		
6/4/2018	<0.005	0.00088 (J)	0.0008 (J)	<0.005					
6/5/2018					<0.005	<0.005			
6/6/2018							0.0059	<0.005	<0.005
10/1/2018	<0.005	<0.005	0.0011 (J)	<0.005					
10/2/2018					0.00064 (J)	<0.005			
10/3/2018							0.0032 (J)	<0.005	<0.005
3/11/2019				<0.005					
3/12/2019	<0.005	0.00069 (J)	0.00063 (J)		<0.005	<0.005			
3/14/2019							0.0029 (J)	<0.005	
3/15/2019									<0.005
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019								0.00017 (J)	0.0001 (J)
4/5/2019							<0.005		
9/23/2019	0.00046 (J)	0.00067 (J)	0.0011 (J)						
9/24/2019				<0.005	0.00055 (J)	<0.005	0.0039 (J)	0.00037 (J)	
9/25/2019									<0.005
3/2/2020	<0.005	0.00043 (J)	0.0004 (J)	<0.005	<0.005	<0.005			
3/3/2020							0.0035 (J)	<0.005	<0.005
3/25/2020	<0.005	<0.005	<0.005			<0.005			
3/26/2020				<0.005	<0.005			<0.005	
3/30/2020							0.0051		0.0011 (J)
9/15/2020	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
9/17/2020								<0.005	<0.005
9/18/2020							0.0029 (J)		

Time Series

Constituent: Arsenic (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	<0.005	
9/17/2020		<0.005
11/10/2020	<0.005	
11/11/2020		<0.005

Time Series

Constituent: Barium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.0346	0.114	0.111	0.0266	0.0519				
5/20/2016						0.174			
5/23/2016							<0.2	0.0315 (J)	0.0841
7/11/2016	0.0311	0.112		0.0309	0.0565	0.134			
7/12/2016			0.115				0.0214	0.0372	0.0886
8/30/2016	0.0293	0.131	0.113	0.031	0.0548	0.212			
9/1/2016							0.0208	0.0364	0.0934
10/19/2016	0.0293	0.111	0.123	0.0332					
10/20/2016					0.0539	0.157			
10/24/2016							0.0208	0.0326	
10/25/2016									0.0991
12/6/2016	0.0304	0.108	0.127	0.0334					
12/7/2016							0.022	0.0301	0.101
12/8/2016					0.0496	0.162			
1/24/2017	0.028	0.102	0.126	0.0192	0.0478	0.168			
1/26/2017							0.0238	0.0287	0.105
3/21/2017	0.0275	0.095	0.12	0.0175	0.0453	0.186			
3/22/2017									0.11
3/23/2017							0.0244	0.0329	
5/22/2017	0.0281	0.103	0.117						
5/23/2017				0.0227	0.0496	0.187			
5/24/2017							0.0228	0.0283	0.106
4/2/2018	0.026	0.099		0.022					
4/3/2018			0.11		0.038	0.14		0.019	0.099
4/4/2018							0.021		
6/4/2018	0.035	0.11	0.12	0.027					
6/5/2018					0.046	0.21			
6/6/2018							0.022	0.022	0.11
10/1/2018	0.029	0.11	0.14	0.018					
10/2/2018					0.047	0.19			
10/3/2018							0.02	0.025	0.11
3/11/2019				0.029					
3/12/2019	0.042	0.12	0.13		0.05	0.2			
3/14/2019							0.019	0.021	
3/15/2019									0.13
4/1/2019			0.13						
4/2/2019	0.04	0.13		0.03	0.044	0.19			
4/4/2019								0.018	0.11
4/5/2019							0.016		
9/23/2019	0.042	0.13	0.13						
9/24/2019				0.03	0.053	0.22	0.021	0.019	
9/25/2019									0.11
3/2/2020	0.034	0.11	0.14	0.023	0.053	0.19			
3/3/2020							0.018	0.018	0.12
3/25/2020	0.043	0.12	0.13			0.19			
3/26/2020				0.026	0.045			0.016	
3/30/2020							0.02		0.11
9/15/2020	0.035	0.12	0.12	0.024	0.045	0.19			
9/17/2020								0.017	0.11
9/18/2020							0.019		

Time Series

Constituent: Barium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	0.24	
9/17/2020		0.13
11/10/2020	0.38	
11/11/2020		0.18

Time Series

Constituent: Beryllium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.003	<0.003	<0.003	<0.003	<0.003				
5/20/2016						<0.003			
5/23/2016							<0.003	<0.003	<0.003
7/11/2016	<0.003	0.0001 (J)		<0.003	<0.003	<0.003		<0.003	
7/12/2016			<0.003				0.0005 (J)	<0.003	<0.003
8/30/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
9/1/2016							0.0005 (J)	<0.003	<0.003
10/19/2016	<0.003	0.0001 (J)	<0.003	<0.003					
10/20/2016					<0.003	<0.003			
10/24/2016							0.0005 (J)	<0.003	
10/25/2016									<0.003
12/6/2016	<0.003	0.0002 (J)	<0.003	<0.003					
12/7/2016							0.0006 (J)	<0.003	<0.003
12/8/2016					<0.003	<0.003			
1/24/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
1/26/2017							0.0005 (J)	<0.003	<0.003
3/21/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
3/22/2017									<0.003
3/23/2017							0.0006 (J)	<0.003	
5/22/2017	<0.003	0.0001 (J)	<0.003						
5/23/2017				<0.003	<0.003	<0.003			
5/24/2017							0.0005 (J)	<0.003	<0.003
4/2/2018	<0.003	<0.003		<0.003					
4/3/2018			<0.003		<0.003	<0.003		<0.003	<0.003
4/4/2018							<0.003		
3/11/2019				5E-05 (J)					
3/12/2019	<0.003	0.00017 (J)	<0.003		<0.003	<0.003			
3/14/2019							0.00043 (J)	<0.003	
3/15/2019									<0.003
4/1/2019			<0.003						
4/2/2019	<0.003	0.00015 (J)		<0.003	<0.003	<0.003			
4/4/2019								<0.003	<0.003
4/5/2019							0.00027 (J)		
9/23/2019	<0.003	0.00011 (J)	<0.003						
9/24/2019				<0.003	<0.003	<0.003	0.00044 (J)	<0.003	
9/25/2019									<0.003
3/2/2020	<0.003	0.00014 (J)	<0.003	0.00019 (J)	<0.003	<0.003			
3/3/2020							0.00043 (J)	<0.003	<0.003
3/25/2020	<0.003	0.00016 (J)	<0.003			<0.003			
3/26/2020				7.6E-05 (J)	<0.003			<0.003	
3/30/2020							0.00043 (J)		<0.003
9/15/2020	<0.003	0.00013 (J)	<0.003	<0.003	<0.003	<0.003			
9/17/2020								<0.003	<0.003
9/18/2020							0.00043 (J)		

Time Series

Constituent: Beryllium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	<0.003	
9/17/2020		<0.003
11/10/2020	<0.003	
11/11/2020		<0.003

Time Series

Constituent: Boron (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.0214 (J)	0.0321 (J)	<0.04	<0.04	<0.04				
5/20/2016						0.0363 (J)			
5/23/2016							15.4	2.02	1.36
7/11/2016	0.0142 (J)	0.0337 (J)		0.0175 (J)	0.0052 (J)	0.0179 (J)			
7/12/2016			0.0074 (J)				16	1.65	1.62
8/30/2016	0.0074 (J)	0.0173 (J)	<0.04	0.0072 (J)	0.0068 (J)	0.014 (J)			
9/1/2016							12.3	1.93	1.31
10/19/2016	0.0224 (J)	0.0341 (J)	0.0085 (J)	0.018 (J)					
10/20/2016					0.0135 (J)	0.0197 (J)			
10/24/2016							13.7	1.93	
10/25/2016									1.27
12/6/2016	0.0211 (J)	0.0326 (J)	0.0085 (J)	0.0158 (J)					
12/7/2016							16.5	2.23	1.42
12/8/2016					0.0083 (J)	0.0159 (J)			
1/24/2017	0.0165 (J)	0.0365 (J)	0.01 (J)	0.0145 (J)	0.0072 (J)	<0.04			
1/26/2017							19.2	2.31	1.19
3/21/2017	0.0187 (J)	0.0349 (J)	0.0079 (J)	0.0101 (J)	<0.04	0.0166 (J)			
3/22/2017									1.32
3/23/2017							23.1	2.72	
5/22/2017	0.0782	0.0475	0.0131 (J)						
5/23/2017				0.0159 (J)	0.0095 (J)	0.0167 (J)			
5/24/2017							25.8	2.26	1.67
10/3/2017	0.0198 (J)	0.0386 (J)	0.0097 (J)	0.0162 (J)	0.0071 (J)	0.017 (J)			
10/4/2017							20.5	2	1.43
6/4/2018	0.02 (J)	0.036 (J)	0.017 (J)	0.014 (J)					
6/5/2018					0.0066 (J)	0.016 (J)			
6/6/2018							16.7	2.4	1.9
10/1/2018	0.013 (J)	0.035 (J)	0.0061 (J)	0.0093 (J)					
10/2/2018					0.0081 (J)	0.014 (J)			
10/3/2018							16.4	2.4	1.7
4/1/2019			0.0066 (J)						
4/2/2019	0.016 (J)	0.034 (J)		0.01 (J)	0.0052 (J)	0.013 (J)			
4/4/2019								2.3	2.1
4/5/2019							12.5		
9/23/2019	0.021 (J)	0.04 (J)	0.0081 (J)						
9/24/2019				0.013 (J)	0.0088 (J)	0.016 (J)	14.7	2.9	
9/25/2019									2.7
3/25/2020	0.025 (J)	0.039 (J)	0.0096 (J)			0.021 (J)			
3/26/2020				0.012 (J)	0.0072 (J)			2.1	
3/30/2020							11.7		2.4
9/15/2020	0.017 (J)	0.044 (J)	0.0071 (J)	0.013 (J)	0.012 (J)	0.016 (J)			
9/17/2020								2.2	2.4
9/18/2020							11		

Time Series

Constituent: Boron (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	0.23	
9/17/2020		0.098 (J)
11/10/2020	0.29	
11/11/2020		0.058 (J)

Time Series

Constituent: Cadmium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025				
5/20/2016						<0.0025			
5/23/2016							0.000139 (J)	0.00271 (J)	<0.0025
7/11/2016	<0.0025	<0.0025		<0.0025	<0.0025	<0.0025			
7/12/2016			<0.0025				<0.0025	0.0019	<0.0025
8/30/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			
9/1/2016							0.0001 (J)	0.0017	<0.0025
10/19/2016	<0.0025	<0.0025	<0.0025	<0.0025					
10/20/2016					<0.0025	<0.0025			
10/24/2016							0.0002 (J)	0.0018	
10/25/2016									<0.0025
12/6/2016	<0.0025	<0.0025	<0.0025	<0.0025					
12/7/2016							0.0001 (J)	0.0018	<0.0025
12/8/2016					<0.0025	<0.0025			
1/24/2017	<0.0025	0.0001 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
1/26/2017							0.0001 (J)	0.0013	<0.0025
3/21/2017	<0.0025	7E-05 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
3/22/2017									<0.0025
3/23/2017							0.0002 (J)	0.002	
5/22/2017	<0.0025	0.0001 (J)	<0.0025						
5/23/2017				<0.0025	<0.0025	<0.0025			
5/24/2017							0.0001 (J)	0.0041	<0.0025
4/2/2018	<0.0025	<0.0025		<0.0025					
4/3/2018			<0.0025		<0.0025	<0.0025		0.0022	<0.0025
4/4/2018							<0.0025		
6/4/2018	<0.0025	0.00014 (J)	<0.0025	<0.0025					
6/5/2018					<0.0025	<0.0025			
6/6/2018							0.00012 (J)	0.0021	<0.0025
10/1/2018	<0.0025	<0.0025	<0.0025	<0.0025					
10/2/2018					<0.0025	<0.0025			
10/3/2018							0.0001 (J)	0.0026	<0.0025
3/11/2019				<0.0025					
3/12/2019	<0.0025	0.00013 (J)	<0.0025		<0.0025	<0.0025			
3/14/2019							<0.0025	0.0024	
3/15/2019									<0.0025
4/1/2019			<0.0025						
4/2/2019	<0.0025	0.00015 (J)		<0.0025	<0.0025	<0.0025			
4/4/2019								0.0018	<0.0025
4/5/2019							7.9E-05 (J)		
9/23/2019	<0.0025	<0.0025	<0.0025						
9/24/2019				<0.0025	<0.0025	<0.0025	<0.0025	0.0014 (J)	
9/25/2019									<0.0025
3/2/2020	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			
3/3/2020							<0.0025	0.0015 (J)	<0.0025
3/25/2020	<0.0025	0.00014 (J)	<0.0025			<0.0025			
3/26/2020				<0.0025	<0.0025			0.0016 (J)	
3/30/2020							<0.0025		<0.0025
9/15/2020	<0.0025	0.00012 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
9/17/2020								0.0016 (J)	<0.0025
9/18/2020							<0.0025		

Time Series

Constituent: Cadmium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	<0.0025	
9/17/2020		<0.0025
11/10/2020	<0.0025	
11/11/2020		<0.0025

Time Series

Constituent: Calcium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	138	22.9	76.2	48.4	35.5				
5/20/2016						56.1			
5/23/2016							664	184	146
7/11/2016	97.2	22.3		73	35.4	49.3			
7/12/2016			61.5				528	186	142
8/30/2016	97.5	26.4	65.1	85.7	28	53.9			
9/1/2016							586	189	141
10/19/2016	99.2	21.7	73.2	89.7					
10/20/2016					26.7	50.7			
10/24/2016							564	200	
10/25/2016									138
12/6/2016	105	18.2	74.9	80					
12/7/2016							590	203	146
12/8/2016					23.5	49.2			
1/24/2017	95.7	18.5	69.6	30.8	24.5	48.3			
1/26/2017							558	212	139
3/21/2017	106	18.6	75.7	34	30.8	51.3			
3/22/2017									150
3/23/2017							652	229	
5/22/2017	107	17.8	71.5						
5/23/2017				43	24.2	49.1			
5/24/2017							617	265	153
10/3/2017	102	20.2	76.3	46.9	29	55.1			
10/4/2017							644	230	156
6/4/2018	124	19.1	73.4	81.9					
6/5/2018					27.8	54.5			
6/6/2018							606	250	177
10/1/2018	108	20.5 (J)	80.9	22 (J)					
10/2/2018					28.9	54.7			
10/3/2018							558	234	160
4/1/2019			80.5						
4/2/2019	132	22.5 (J)		76	26.3	49.7			
4/4/2019								214	196
4/5/2019							606		
9/23/2019	118	19.5	71						
9/24/2019				36.6	29.3	52.5	507	202	
9/25/2019									185
3/25/2020	127	23	89.8				58.1		
3/26/2020				14.9	27.8			240	
3/30/2020							600		208
9/15/2020	103	21.1	73.1	20.4	27.9	49.9			
9/17/2020								188	190
9/18/2020							623		

Time Series

Constituent: Calcium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	30	
9/17/2020		43.8
11/10/2020	33.6	
11/11/2020		44.4

Time Series

Constituent: Chloride (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	9.94	6.14	5.93	4.56	1.57				
5/20/2016						1.35			
5/23/2016							659	209	25.8
7/11/2016	6.3	5.9		5	2	1.7			
7/12/2016			6.2				620	190	34
8/30/2016	6	6.2	6.4	4.9	2	1.6			
9/1/2016							510	200	34
10/19/2016	5.8	6.1	6.5	4.6					
10/20/2016					2.2	1.6			
10/24/2016							110	200	
10/25/2016									35
12/6/2016	5.4	6	7.2	4.5					
12/7/2016							510	240	38
12/8/2016					2	1.6			
1/24/2017	5.2	6.1	6.4	4.7	1.6	1.9			
1/26/2017							640	260	41
3/21/2017	4.6	5.9	7.5	4.3	2	1.3			
3/22/2017									41
3/23/2017							600	280	
5/22/2017	4.6	5.9	6.5						
5/23/2017				4.5	1.7	1.2			
5/24/2017							510	240	44
10/3/2017	5.6	6.3	6.5	4.8	1.7	2.1			
10/4/2017							420	210	50
6/4/2018	13.1	6.1	6.3	4.5					
6/5/2018					1.6	1.2			
6/6/2018							357	196	50.6
10/1/2018	6.6	6.4	6.4	3.8					
10/2/2018					2.4	1.7			
10/3/2018							368	200	49.9
4/1/2019			6.5						
4/2/2019	20.3	5.8		4.4	1.7	1.6			
4/4/2019								138	76.8
4/5/2019							227		
9/23/2019	17.7	5.1	5.9						
9/24/2019				3.6	1.7	1.3	188	120	
9/25/2019									84.4
3/25/2020	20.4	5.2	6.1			1.2			
3/26/2020				3.4	1.4			142	
3/30/2020							236		80.2
9/15/2020	13.4	5	6	3.3	1.7	1.2			
9/17/2020								108	99.3
9/18/2020							288		

Time Series

Constituent: Chloride (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	7.2	
9/17/2020		5.8
11/10/2020	7.8	
11/11/2020		3.1

Time Series

Constituent: Chromium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
5/23/2016							<0.01	<0.01	<0.01
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01				<0.01	<0.01	<0.01
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/1/2016							<0.01	<0.01	<0.01
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
10/24/2016							<0.01	<0.01	
10/25/2016									<0.01
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/7/2016							<0.01	<0.01	<0.01
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
1/26/2017							<0.01	<0.01	<0.01
3/21/2017	0.0005 (J)	<0.01	<0.01	0.0004 (J)	<0.01	0.0007 (J)			
3/22/2017									0.0021 (J)
3/23/2017							<0.01	0.0005 (J)	
5/22/2017	<0.01	<0.01	0.0007 (J)						
5/23/2017				<0.01	<0.01	<0.01			
5/24/2017							<0.01	<0.01	<0.01
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01		<0.01	<0.01
4/4/2018							<0.01		
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019							<0.01	<0.01	
3/15/2019									<0.01
4/1/2019			<0.01						
4/2/2019	<0.01	0.0079 (J)		0.019	<0.01	<0.01			
4/4/2019								<0.01	<0.01
4/5/2019							<0.01		
9/23/2019	<0.01	0.00058 (J)	<0.01						
9/24/2019				<0.01	<0.01	<0.01	<0.01	0.00041 (J)	
9/25/2019									<0.01
3/2/2020	<0.01	0.00041 (J)	<0.01	0.0004 (J)	0.0005 (J)	<0.01			
3/3/2020							0.00042 (J)	<0.01	0.00071 (J)
3/25/2020	0.00072 (J)	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01			<0.01	
3/30/2020							0.00066 (J)		0.0004 (J)
9/15/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/17/2020								<0.01	<0.01
9/18/2020							<0.01		

Time Series

Constituent: Chromium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	0.0012 (J)	
9/17/2020		<0.01
11/10/2020	0.00089 (J)	
11/11/2020		0.00063 (J)

Time Series

Constituent: Cobalt (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.005	0.0293	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
5/23/2016							<0.005	0.0419 (J)	<0.005
7/11/2016	0.0004 (J)	0.0267		<0.005	0.001 (J)	<0.005			
7/12/2016			<0.005				0.0232	0.0393	<0.005
8/30/2016	<0.005	0.028	<0.005	<0.005	0.001 (J)	<0.005			
9/1/2016							0.0248	0.045	<0.005
10/19/2016	<0.005	0.0201	<0.005	<0.005					
10/20/2016					0.0008 (J)	<0.005			
10/24/2016							0.0253	0.0557	
10/25/2016									<0.005
12/6/2016	<0.005	0.0184	<0.005	<0.005					
12/7/2016							0.0269	0.0536	<0.005
12/8/2016					0.0006 (J)	<0.005			
1/24/2017	<0.005	0.0206	<0.005	<0.005	0.0006 (J)	<0.005			
1/26/2017							0.0294	0.055	<0.005
3/21/2017	<0.005	0.0251	<0.005	<0.005	0.0008 (J)	<0.005			
3/22/2017									<0.005
3/23/2017							0.0311	0.0715	
5/22/2017	<0.005	0.0263	<0.005						
5/23/2017				<0.005	0.0006 (J)	<0.005			
5/24/2017							0.0279	0.0446	<0.005
4/2/2018	<0.005	0.019		<0.005					
4/3/2018			<0.005		<0.005	<0.005		0.032	<0.005
4/4/2018							0.025		
6/4/2018	<0.005	0.025	<0.005	<0.005					
6/5/2018					<0.005	<0.005			
6/6/2018							0.027	0.032	<0.005
10/1/2018	<0.005	0.026	<0.005	<0.005					
10/2/2018					<0.005	<0.005			
10/3/2018							0.023	0.051	<0.005
3/11/2019				<0.005					
3/12/2019	<0.005	0.017	<0.005		0.00099 (J)	<0.005			
3/14/2019							0.025	0.038	
3/15/2019									<0.005
4/1/2019			<0.005						
4/2/2019	<0.005	0.019		<0.005	0.0012 (J)	<0.005			
4/4/2019								0.035	0.00028 (J)
4/5/2019							0.021		
9/23/2019	<0.005	0.038	<0.005						
9/24/2019				<0.005	0.00063 (J)	<0.005	0.026	0.022	
9/25/2019									<0.005
3/2/2020	<0.005	0.019	<0.005	0.00063 (J)	0.00093 (J)	<0.005			
3/3/2020							0.029	0.03	0.00037 (J)
3/25/2020	<0.005	0.02	<0.005			<0.005			
3/26/2020				0.00058 (J)	0.0013 (J)			0.022	
3/30/2020							0.028		<0.005
9/15/2020	<0.005	0.021	<0.005	<0.005	0.00047 (J)	<0.005			
9/17/2020								0.026	<0.005
9/18/2020							0.027		

Time Series

Constituent: Cobalt (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	<0.005	
9/17/2020		<0.005
11/10/2020	<0.005	
11/11/2020		<0.005

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.397 (U)	0.627 (U)	0.342 (U)	0.662 (U)	0.685 (U)				
5/20/2016						0.843 (U)			
5/23/2016							0.568 (U)	0.171 (U)	
7/1/2016									0 (U)
7/11/2016	0.738 (U)	1.38		1.19	1.68	0.494 (U)			
7/12/2016			0.499 (U)				1.31	0.611 (U)	0.182 (U)
8/30/2016	0.581 (U)	1.05 (U)	0.976 (U)	0.847 (U)	2.42	0.946 (U)			
9/1/2016							1.64	0.766 (U)	1.23
10/19/2016	0.213 (U)	1.11 (U)	0.626 (U)	2.34					
10/20/2016					0.351 (U)	0.664 (U)			
10/24/2016							1.88	0.969	
10/25/2016									1.05 (U)
12/6/2016	0.444 (U)	0.741 (U)	0.805 (U)	0.925 (U)					
12/7/2016							1.35	0.302 (U)	1.11 (U)
12/8/2016					0.905 (U)	0.421 (U)			
1/24/2017	0.373 (U)	0.908 (U)	0.336 (U)	0.607 (U)	0.0774 (U)	0.965 (U)			
1/26/2017							2.1	0.626 (U)	1.29 (U)
3/21/2017	0.816 (U)	0.567 (U)	0.358 (U)	0.074 (U)	0.0599 (U)	0.139 (U)			
3/22/2017									0.453 (U)
3/23/2017							1.17	0.662 (U)	
5/22/2017	0.554 (U)	0.638 (U)	0.744 (U)						
5/23/2017				0.55 (U)	0.477 (U)	0.308 (U)			
5/24/2017							1 (U)	0.202 (U)	1.05 (U)
4/2/2018	0.405 (U)	0.761 (U)		0.371 (U)					
4/3/2018			0.684 (U)		0.858 (U)	0.828 (U)		0.384 (U)	0.783 (U)
4/4/2018							1.72		
6/4/2018	1.13 (U)	0.975 (U)	0.0291 (U)	0.622 (U)					
6/5/2018					0.767 (U)	0.424 (U)			
6/6/2018							1.31 (U)	1.32 (U)	0.595 (U)
10/1/2018	0.132 (U)	0.434 (U)	0.781 (U)	0.132 (U)					
10/2/2018					0.489 (U)	0.643 (U)			
10/3/2018							1.48	0.858 (U)	1.03 (U)
3/11/2019				0.781 (U)					
3/12/2019	0.327 (U)	0.454 (U)	1.01 (U)		0.833 (U)	0.982 (U)			
3/14/2019							1.5	0.462 (U)	
3/15/2019									0.591 (U)
4/1/2019			0.76 (U)						
4/2/2019	0.739 (U)	0.651 (U)		0.494 (U)	1.07 (U)	0.621 (U)			
4/4/2019								0.512 (U)	0.96 (U)
4/5/2019							1.43 (U)		
9/24/2019				0.455 (U)	0.201 (U)	0.874 (U)	1.17	0.582 (U)	
9/25/2019									0.643 (U)
9/30/2019	0.306 (U)	1.04 (U)	0.384 (U)						
3/2/2020	0.61 (U)	1.58	0.249 (U)	0.937 (U)	0.547 (U)	0.676 (U)			
3/3/2020							1.84	1.43	1.32 (U)
3/25/2020	4.36	0.621 (U)	0.833 (U)			0.509 (U)			
3/26/2020				0.578 (U)	0.907 (U)			0.855 (U)	
3/30/2020							1.08 (U)		0.288 (U)
9/15/2020	0.748 (U)	0.124 (U)	0.161 (U)	0.179 (U)	0.601 (U)	1.36 (U)			
9/17/2020								0.395 (U)	1.1 (U)
9/18/2020							1.8 (U)		

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	0.422 (U)	
9/17/2020		0.665 (U)
11/10/2020	0.293 (U)	
11/11/2020		1.28

Time Series

Constituent: Field pH (s.u.) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	7.27	5.81	7.45	6.51	6.62				
5/20/2016						7.58			
5/23/2016							4.56	6.17	7.15
7/11/2016	7.06	5.68		6.65	6.54	7.32			
7/12/2016			7.32				4.49	6.17	7.1
8/30/2016	7.28	5.63	7.43	7.14	6.38	7.69			
9/1/2016							4.54	6.22	7.29
10/19/2016	7.02	5.46	7.03	7.08					
10/20/2016					6.52	7.43			
10/24/2016							4.63	5.97	
10/25/2016									7.03
12/6/2016	7.09	5.38	7.08	7					
12/7/2016							4.6	5.87	6.85
12/8/2016					6.5	7.56			
1/24/2017	7.2	5.37	7.39	6.16	6.59	7.52			
1/26/2017							4.8	6.05	7.07
3/21/2017	7.01	4.9	6.83	6.07	6.55	7.4			
3/22/2017									7.15
3/23/2017							4.57	5.79	
5/22/2017	7.11	5.2	7.02						
5/23/2017				6.28	6.5	7.53			
5/24/2017							4.61	6.01	7.11
10/3/2017	7.21	5.3	7.47	6.45	6.63	7.51			
10/4/2017							4.74	5.82	7.17
4/2/2018	7.1	5.4		6.23					
4/3/2018			7.38		6.59	7.53		5.98	7.07
4/4/2018							4.5		
6/4/2018	7.06	5.27	7.38	6.82					
6/5/2018					6.44	7.37			
6/6/2018							4.49	6.12	7
10/1/2018	7.09	5.31	7.13	5.73					
10/2/2018					6.35	7.36			
10/3/2018							4.67	5.92	6.94
3/11/2019				6.27					
3/12/2019	7.03	5.42	7.29		6.42	7.5			
3/14/2019							4.66	5.71	
3/15/2019									7.09
4/1/2019			7.16						
4/2/2019	6.86	5.41		6.66	6.38	7.46			
4/4/2019								5.66	6.95
4/5/2019							4.67		
9/23/2019	7.02	5.33	7.3						
9/24/2019				6.16	6.4	7.41	4.77	6.33	
9/25/2019									6.92
3/2/2020	7.1	5.43	7.12	5.63	6.8	7.67			
3/3/2020							4.77	6	7.1
3/25/2020	6.95	5.36	7.4			7.39			
3/26/2020				5.77	6.38			6.03	
3/30/2020							4.57		7.09
9/15/2020	7.15	5.22	7.29	5.75	6.33	7.37			
9/17/2020								6.11	7.11
9/18/2020							4.88		

Time Series

Constituent: Field pH (s.u.) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	7.83	
9/17/2020		7.62
11/10/2020	7.84	
11/11/2020		7.68

Time Series

Constituent: Fluoride (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.105 (J)	0.0303 (J)	0.0513 (J)	0.036 (J)	0.08 (J)				
5/20/2016						0.065 (J)			
5/23/2016							<0.1	<0.1	0.038 (J)
7/11/2016	0.16 (J)	0.05 (J)		0.09 (J)	0.09 (J)	0.13 (J)			
7/12/2016			0.12 (J)				0.2 (J)	0.09 (J)	0.26 (J)
8/30/2016	0.09 (J)	0.06 (J)	0.09 (J)	0.06 (J)	0.08 (J)	0.07 (J)			
9/1/2016							0.08 (J)	0.22 (J)	0.42
10/19/2016	0.1 (J)	0.04 (J)	0.1 (J)	0.07 (J)					
10/20/2016					0.1 (J)	0.06 (J)			
10/24/2016							0.04 (J)	0.07 (J)	
10/25/2016									0.25 (J)
12/6/2016	0.11 (J)	0.36	0.21 (J)	0.07 (J)					
12/7/2016							0.11 (J)	0.23 (J)	0.23 (J)
12/8/2016					0.08 (J)	0.06 (J)			
1/24/2017	0.09 (J)	<0.1	0.06 (J)	<0.1	0.09 (J)	0.02 (J)			
1/26/2017							0.13 (J)	<0.1	0.02 (J)
3/21/2017	0.13 (J)	<0.1	0.005 (J)	<0.1	0.04 (J)	0.08 (J)			
3/22/2017									0.3
3/23/2017							0.28 (J)	0.12 (J)	
5/22/2017	0.12 (J)	<0.1	0.05 (J)						
5/23/2017				0.01 (J)	0.04 (J)	0.006 (J)			
5/24/2017							0.32	0.31	0.46
10/3/2017	0.13 (J)	<0.1	0.13 (J)	<0.1	0.06 (J)	<0.1			
10/4/2017							0.52	0.6	<0.1
4/2/2018	<0.1	<0.1		<0.1					
4/3/2018			<0.1		<0.1	<0.1		<0.1	<0.1
4/4/2018							<0.1		
6/4/2018	0.074 (J)	<0.1	<0.1	0.097 (J)					
6/5/2018					0.083 (J)	0.055 (J)			
6/6/2018							0.25 (J)	0.17 (J)	<0.1
10/1/2018	<0.1	<0.1	<0.1	<0.1					
10/2/2018					<0.1	0.076 (J)			
10/3/2018							0.21 (J)	<0.1	<0.1
3/11/2019				0.035 (J)					
3/12/2019	0.29 (J)	0.038 (J)	0.072 (J)		0.079 (J)	0.061 (J)			
3/14/2019							0.24 (J)	<0.1	
3/15/2019									<0.1
4/1/2019			0.029 (J)						
4/2/2019	0.1 (J)	0.071 (J)		<0.1	0.12 (J)	<0.1			
4/4/2019								0.066 (J)	<0.1
4/5/2019							0.66		
9/23/2019	0.078 (J)	<0.1	<0.1						
9/24/2019				<0.1	0.058 (J)	<0.1	0.053 (J)	0.12 (J)	
9/25/2019									<0.1
3/2/2020	0.076 (J)	<0.1	<0.1	<0.1	0.053 (J)	<0.1			
3/3/2020							<0.1	0.064 (J)	<0.1
3/25/2020	0.098 (J)	<0.1	<0.1			<0.1			
3/26/2020				<0.1	0.066 (J)			<0.1	
3/30/2020							0.092 (J)		0.059 (J)
9/15/2020	0.082 (J)	<0.1	<0.1	<0.1	0.061 (J)	<0.1			
9/17/2020								<0.1	<0.1
9/18/2020							<0.1		

Time Series

Constituent: Fluoride (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	0.52	
9/17/2020		0.2
11/10/2020	0.59	
11/11/2020		0.1

Time Series

Constituent: Lead (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.005	<0.005	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
5/23/2016							0.00182 (J)	<0.005	<0.005
7/11/2016	<0.005	<0.005		<0.005	<0.005	<0.005			
7/12/2016			0.0001 (J)				0.0015 (J)	<0.005	<0.005
8/30/2016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
9/1/2016							0.0016 (J)	<0.005	<0.005
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					0.0002 (J)	<0.005			
10/24/2016							0.0016 (J)	<0.005	
10/25/2016									<0.005
12/6/2016	<0.005	<0.005	<0.005	0.0002 (J)					
12/7/2016							0.0018 (J)	<0.005	<0.005
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
1/26/2017							0.002 (J)	<0.005	0.0001 (J)
3/21/2017	<0.005	6E-05 (J)	0.0001 (J)	<0.005	<0.005	<0.005			
3/22/2017									0.0002 (J)
3/23/2017							0.0019 (J)	0.001 (J)	
5/22/2017	<0.005	9E-05 (J)	<0.005						
5/23/2017				<0.005	9E-05 (J)	0.0003 (J)			
5/24/2017							0.0016 (J)	0.0001 (J)	0.0001 (J)
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005		<0.005	<0.005
4/4/2018							<0.005		
3/11/2019				<0.005					
3/12/2019	<0.005	<0.005	<0.005		<0.005	<0.005			
3/14/2019							0.0014 (J)	<0.005	
3/15/2019									<0.005
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019								7.2E-05 (J)	0.00016 (J)
4/5/2019							0.0012 (J)		
9/23/2019	7.8E-05 (J)	9.2E-05 (J)	<0.005						
9/24/2019				<0.005	<0.005	7.1E-05 (J)	0.0013 (J)	0.0002 (J)	
9/25/2019									<0.005
3/2/2020	4.8E-05 (J)	9.5E-05 (J)	<0.005	0.00026 (J)	<0.005	<0.005			
3/3/2020							0.0017 (J)	5.3E-05 (J)	0.00016 (J)
3/25/2020	<0.005	0.00011 (J)	<0.005			<0.005			
3/26/2020				5.9E-05 (J)	<0.005			<0.005	
3/30/2020							0.0015 (J)		7.3E-05 (J)
9/15/2020	<0.005	8E-05 (J)	4.2E-05 (J)	4.9E-05 (J)	<0.005	<0.005		<0.005	7.8E-05 (J)
9/17/2020								<0.005	
9/18/2020							0.0012 (J)		

Time Series

Constituent: Lead (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	0.00021 (J)	
9/17/2020		6.2E-05 (J)
11/10/2020	0.0002 (J)	
11/11/2020		8.4E-05 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.03	<0.03	<0.03	<0.03	<0.03				
5/20/2016						<0.03			
5/23/2016							<0.03	<0.03	<0.03
7/11/2016	<0.03	0.0014 (J)		0.0015 (J)	0.0034 (J)	0.01 (J)			
7/12/2016			0.0024 (J)				<0.03	<0.03	0.0037 (J)
8/30/2016	<0.03	<0.03	0.0025 (J)	0.0027 (J)	0.003 (J)	0.0095 (J)			
9/1/2016							<0.03	0.0021 (J)	0.0033 (J)
10/19/2016	<0.03	<0.03	0.003 (J)	0.0042 (J)					
10/20/2016					0.0031 (J)	0.0105 (J)			
10/24/2016							<0.03	<0.03	
10/25/2016									0.0029 (J)
12/6/2016	<0.03	<0.03	0.0033 (J)	0.0046 (J)					
12/7/2016							<0.03	<0.03	0.0029 (J)
12/8/2016					0.0027 (J)	0.01 (J)			
1/24/2017	<0.03	<0.03	0.003 (J)	<0.03	0.0028 (J)	0.0108 (J)			
1/26/2017							<0.03	<0.03	0.0028 (J)
3/21/2017	<0.03	0.0012 (J)	0.0034 (J)	<0.03	0.0037 (J)	0.0115 (J)			
3/22/2017									0.0025 (J)
3/23/2017							<0.03	0.0016 (J)	
5/22/2017	<0.03	<0.03	0.003 (J)						
5/23/2017				<0.03	0.0033 (J)	0.011 (J)			
5/24/2017							<0.03	0.0029 (J)	0.0029 (J)
4/2/2018	<0.03	0.0015 (J)		<0.03					
4/3/2018			0.003 (J)		0.0033 (J)	0.012 (J)		0.0026 (J)	0.0028 (J)
4/4/2018							<0.03		
6/4/2018	0.001 (J)	0.0016 (J)	0.0027 (J)	0.00097 (J)					
6/5/2018					0.0034 (J)	0.011 (J)			
6/6/2018							<0.03	0.0013 (J)	0.0031 (J)
10/1/2018	0.00099 (J)	0.0013 (J)	0.0032 (J)	<0.03					
10/2/2018					0.0035 (J)	0.01 (J)			
10/3/2018							<0.03	0.0017 (J)	0.0026 (J)
3/11/2019				<0.03					
3/12/2019	0.001 (J)	0.0018 (J)	0.0032 (J)		0.0032 (J)	0.011 (J)			
3/14/2019							<0.03	<0.03	
3/15/2019									0.0041 (J)
4/1/2019			0.0032 (J)						
4/2/2019	0.001 (J)	0.0018 (J)		0.00098 (J)	0.0028 (J)	0.0095 (J)			
4/4/2019								0.0009 (J)	0.0032 (J)
4/5/2019							<0.03		
9/23/2019	0.0011 (J)	0.0016 (J)	0.0029 (J)						
9/24/2019				<0.03	0.0035 (J)	0.011 (J)	<0.03	0.0012 (J)	
9/25/2019									0.0038 (J)
3/2/2020	0.0012 (J)	0.0017 (J)	0.0037 (J)	0.0012 (J)	0.0036 (J)	0.012			
3/3/2020							<0.03	0.0084 (J)	0.0047 (J)
3/25/2020	0.00083 (J)	0.0017 (J)	0.0035 (J)			0.011 (J)			
3/26/2020				0.00095 (J)	0.0029 (J)			0.0061 (J)	
3/30/2020							<0.03		0.0041 (J)
9/15/2020	0.00087 (J)	0.0015 (J)	0.0026 (J)	<0.03	0.003 (J)	0.0095 (J)			
9/17/2020								0.0094 (J)	0.0043 (J)
9/18/2020							<0.03		

Time Series

Constituent: Lithium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	0.014 (J)	
9/17/2020		0.0039 (J)
11/10/2020	0.025 (J)	
11/11/2020		0.0086 (J)

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
5/23/2016							<0.01	<0.01	<0.01
7/11/2016	<0.01	<0.01		<0.01	<0.01	0.0008 (J)			
7/12/2016			<0.01				<0.01	0.0007 (J)	<0.01
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/1/2016							<0.01	<0.01	<0.01
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
10/24/2016							<0.01	<0.01	
10/25/2016									<0.01
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/7/2016							<0.01	<0.01	<0.01
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
1/26/2017							<0.01	<0.01	<0.01
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	0.0002 (J)			
3/22/2017									<0.01
3/23/2017							<0.01	<0.01	
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
5/24/2017							<0.01	<0.01	<0.01
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01		<0.01	<0.01
4/4/2018							<0.01		
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019							<0.01	<0.01	
3/15/2019									<0.01
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019								<0.01	<0.01
4/5/2019							<0.01		
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01	<0.01	<0.01	
9/25/2019									<0.01
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/3/2020							<0.01	<0.01	<0.01
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01			<0.01	
3/30/2020							<0.01		<0.01
9/15/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/17/2020								<0.01	<0.01
9/18/2020							<0.01		

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	0.0019 (J)	
9/17/2020		0.0037 (J)
11/10/2020	0.0018 (J)	
11/11/2020		<0.01

Time Series

Constituent: Selenium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
5/23/2016							0.017	<0.01	<0.01
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01				0.0146	<0.01	<0.01
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/1/2016							0.0137	<0.01	<0.01
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
10/24/2016							0.0135	0.0012 (J)	
10/25/2016									<0.01
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/7/2016							0.01 (J)	0.0041 (J)	<0.01
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	0.0011 (J)	<0.01			
1/26/2017							0.0214	<0.01	<0.01
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/22/2017									<0.01
3/23/2017							0.0167	0.0016 (J)	
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
5/24/2017							0.0083 (J)	<0.01	<0.01
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01		<0.01	<0.01
4/4/2018							0.012		
6/4/2018	<0.01	<0.01	<0.01	<0.01					
6/5/2018					<0.01	<0.01			
6/6/2018							0.014	<0.01	<0.01
10/1/2018	<0.01	<0.01	<0.01	<0.01					
10/2/2018					<0.01	<0.01			
10/3/2018							0.0056 (J)	<0.01	<0.01
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019							0.0048 (J)	<0.01	
3/15/2019									<0.01
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019								0.00021 (J)	8.9E-05 (J)
4/5/2019							0.00091 (J)		
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01	0.0064 (J)	<0.01	
9/25/2019									<0.01
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/3/2020							0.0045 (J)	<0.01	<0.01
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01			<0.01	
3/30/2020							0.0049 (J)		<0.01
9/15/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/17/2020								<0.01	<0.01
9/18/2020							0.0045 (J)		

Time Series

Constituent: Selenium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	<0.01	
9/17/2020		<0.01
11/10/2020	<0.01	
11/11/2020		<0.01

Time Series

Constituent: Sulfate (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	66.9	48.6	42.3	1.22	25				
5/20/2016						34.4			
5/23/2016							1070	424	203
7/11/2016	41	45		3.7	27	34			
7/12/2016			44				1300	440	220
8/30/2016	36	42	40	6.8	23	36			
9/1/2016							1300	440	220
10/19/2016	46	44	43	11					
10/20/2016					19	36			
10/24/2016							280	420	
10/25/2016									230
12/6/2016	59	44	43	13					
12/7/2016							1300	450	220
12/8/2016					20	36			
1/24/2017	46	46	48	5.7	20	37			
1/26/2017							1400	490	250
3/21/2017	63	46	45	1.7	23	37			
3/22/2017									240
3/23/2017							1500	530	
5/22/2017	77	48	46						
5/23/2017				1.5	21	38			
5/24/2017							1400	500	230
10/3/2017	42	47	48	1.3	21	38			
10/4/2017							1400	560	220
6/4/2018	71.8	47.8	46.6	4.9					
6/5/2018					22.9	38			
6/6/2018							1520	469	233
10/1/2018	49.1	48.1	48.6	0.59 (J)					
10/2/2018					20.3	38.5			
10/3/2018							1550	600	215
4/1/2019			50.4						
4/2/2019	84.3	48.7		4.9	23.8	35.5			
4/4/2019								528	251
4/5/2019							1520		
9/23/2019	70.2	47.2	43.9						
9/24/2019				<1	20.7	35.4	1110	382	
9/25/2019									223
3/25/2020	85.9	46.3	50.5			35.1			
3/26/2020				<1	21.6			438	
3/30/2020							1150		223
9/15/2020	47.3	51.5	44.7	<1	21.2	35.3			
9/17/2020								416	254
9/18/2020							1260		

Time Series

Constituent: Sulfate (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	6.9	
9/17/2020		10.9
11/10/2020	6.3	
11/11/2020		9.4

Time Series

Constituent: Thallium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.001	<0.001	<0.001	<0.001	<0.001				
5/20/2016						<0.001			
5/23/2016							0.000306 (J)	<0.001	<0.001
7/11/2016	<0.001	<0.001		<0.001	<0.001	<0.001			
7/12/2016			<0.001				0.0003 (J)	<0.001	<0.001
8/30/2016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
9/1/2016							0.0003 (J)	<0.001	<0.001
10/19/2016	<0.001	<0.001	<0.001	<0.001					
10/20/2016					<0.001	<0.001			
10/24/2016							0.0004	<0.001	
10/25/2016									<0.001
12/6/2016	<0.001	<0.001	<0.001	<0.001					
12/7/2016							0.0003 (J)	<0.001	<0.001
12/8/2016					<0.001	<0.001			
1/24/2017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
1/26/2017							0.0003 (J)	<0.001	<0.001
3/21/2017	<0.001	3E-05 (J)	<0.001	<0.001	<0.001	<0.001			
3/22/2017									<0.001
3/23/2017							0.0003 (J)	<0.001	
5/22/2017	<0.001	<0.001	<0.001						
5/23/2017				<0.001	<0.001	<0.001			
5/24/2017							0.0003 (J)	<0.001	<0.001
4/2/2018	<0.001	<0.001		<0.001					
4/3/2018			<0.001		<0.001	<0.001		<0.001	<0.001
4/4/2018							0.00028 (J)		
6/4/2018	<0.001	<0.001	<0.001	<0.001					
6/5/2018					<0.001	<0.001			
6/6/2018							0.00029 (J)	<0.001	<0.001
10/1/2018	<0.001	<0.001	<0.001	<0.001					
10/2/2018					<0.001	<0.001			
10/3/2018							0.00029 (J)	<0.001	<0.001
3/11/2019				<0.001					
3/12/2019	<0.001	<0.001	<0.001		<0.001	<0.001			
3/14/2019							0.00028 (J)	<0.001	
3/15/2019									<0.001
4/1/2019			<0.001						
4/2/2019	<0.001	<0.001		<0.001	<0.001	<0.001			
4/4/2019								<0.001	<0.001
4/5/2019							0.00028 (J)		
9/23/2019	<0.001	<0.001	<0.001						
9/24/2019				<0.001	<0.001	<0.001	0.0003 (J)	<0.001	
9/25/2019									<0.001
3/2/2020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
3/3/2020							0.00026 (J)	<0.001	<0.001
3/25/2020	<0.001	<0.001	<0.001			5.7E-05 (J)			
3/26/2020				<0.001	<0.001			<0.001	
3/30/2020							0.00028 (J)		<0.001
9/15/2020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
9/17/2020								<0.001	<0.001
9/18/2020							0.00028 (J)		

Time Series

Constituent: Thallium (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	<0.001	
9/17/2020		<0.001
11/10/2020	<0.001	
11/11/2020		<0.001

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	421	143	267	165	168				
5/20/2016						223			
5/23/2016							4130	1270	570
7/11/2016	363	125		266	158	225			
7/12/2016			249				3140	1100	585
8/30/2016	330	168	254	292	141	232			
9/1/2016							3200	1180	625
10/19/2016	380	176	357	338					
10/20/2016					99	225			
10/24/2016							2920	1090	
10/25/2016									563
12/6/2016	377	145	285	356					
12/7/2016							2740	1040	561
12/8/2016					116	235			
1/24/2017	342	129	300	131	156	272			
1/26/2017							3080	1260	608
3/21/2017	340	103	288	132	144	222			
3/22/2017									599
3/23/2017							3060	1360	
5/22/2017	338	92	263						
5/23/2017				183	134	231			
5/24/2017							3140	1320	598
10/3/2017	343	127	300	161	147	243			
10/4/2017							3210	1340	626
6/4/2018	415	140	266	240					
6/5/2018					152	235			
6/6/2018							2620	1120	678
10/1/2018	354	135	291	106					
10/2/2018					146	228			
10/3/2018							2430	1140	700
4/1/2019			284						
4/2/2019	452	133		230	144	238			
4/4/2019								926	704
4/5/2019							2310		
9/23/2019	442	129	268						
9/24/2019				131	133	222	2470	1140	
9/25/2019									813
3/25/2020	496	138	284			240			
3/26/2020				69	104			1000	
3/30/2020							2590		787
9/15/2020	265	124	258	93	116	217			
9/17/2020								956	804
9/18/2020							2440		

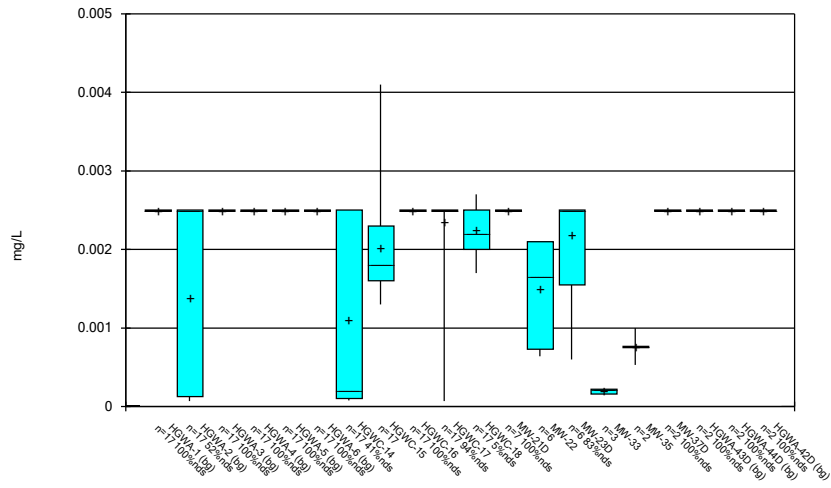
Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/10/2021 3:21 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-44D (bg)	HGWA-42D (bg)
9/16/2020	270	
9/17/2020		188
11/10/2020	287	
11/11/2020		175

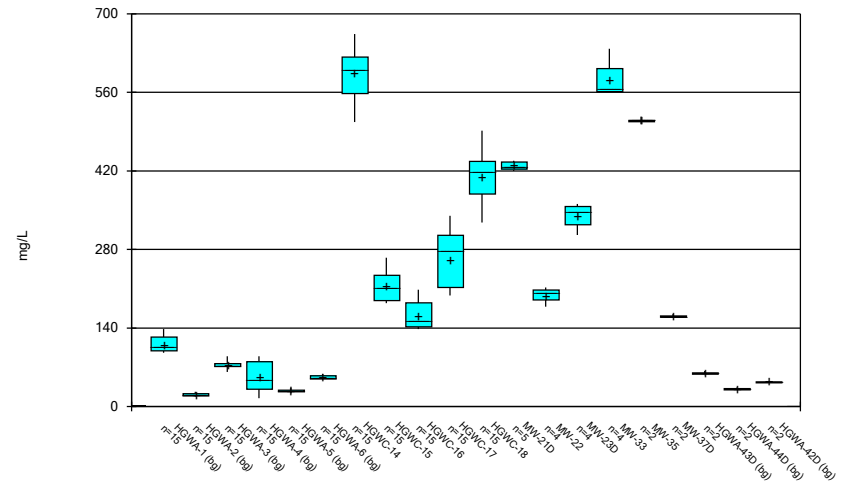
FIGURE B.

Box & Whiskers Plot



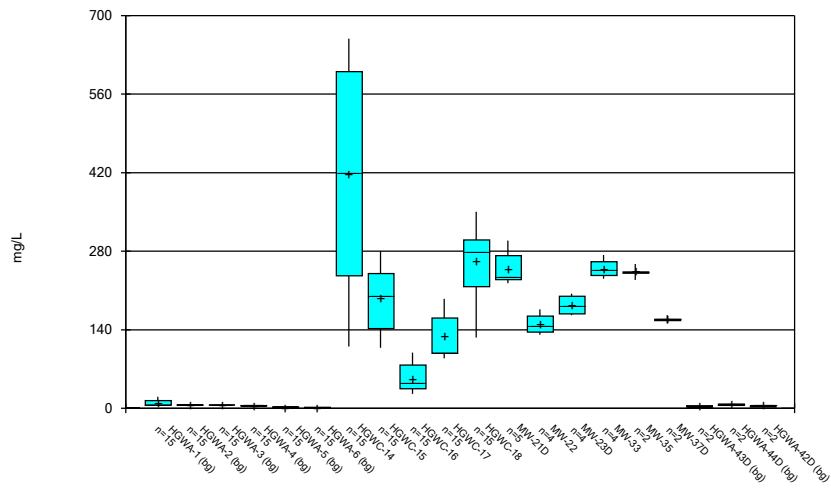
Constituent: Cadmium Analysis Run 2/10/2021 3:22 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



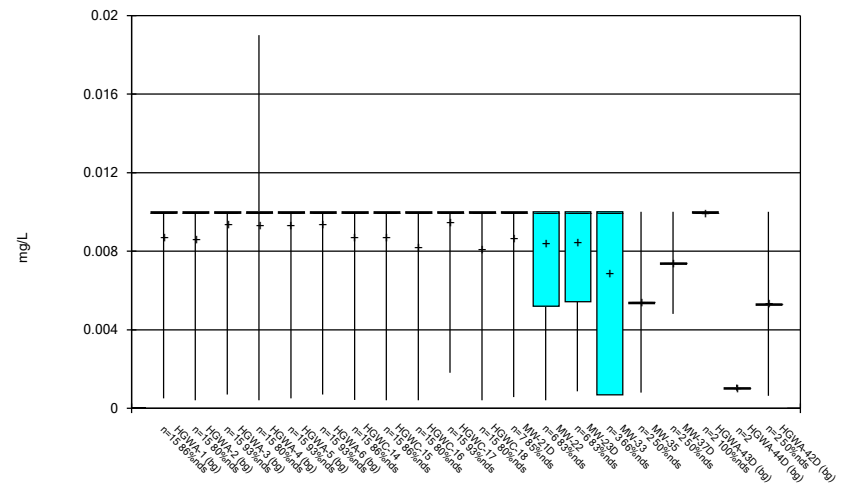
Constituent: Calcium Analysis Run 2/10/2021 3:22 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



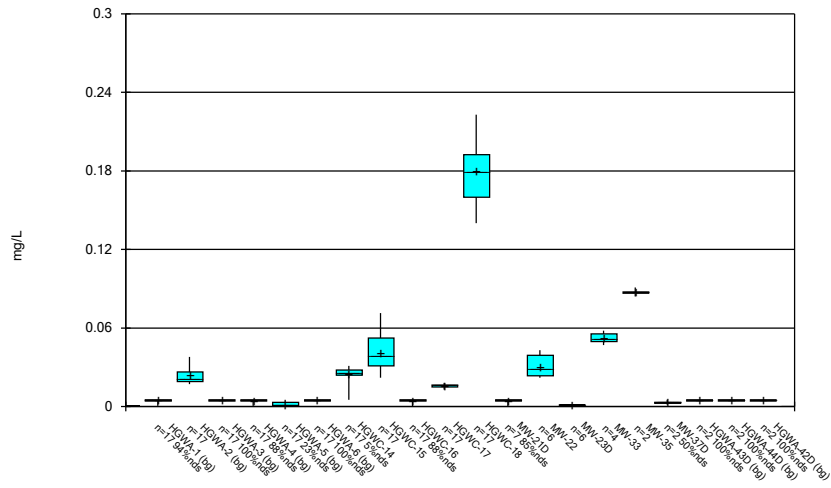
Constituent: Chloride Analysis Run 2/10/2021 3:22 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



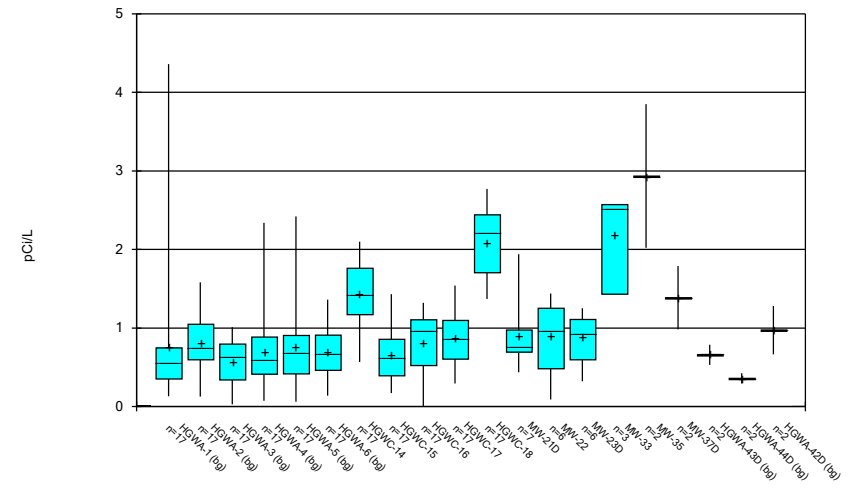
Constituent: Chromium Analysis Run 2/10/2021 3:22 PM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



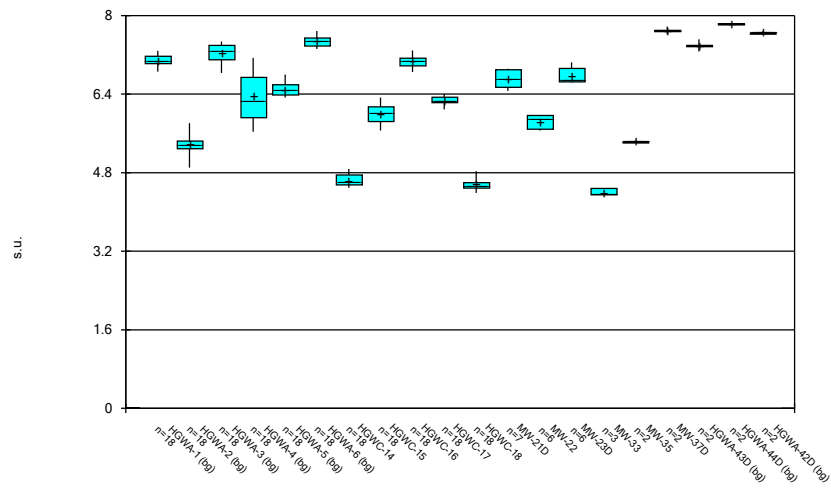
Constituent: Cobalt Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



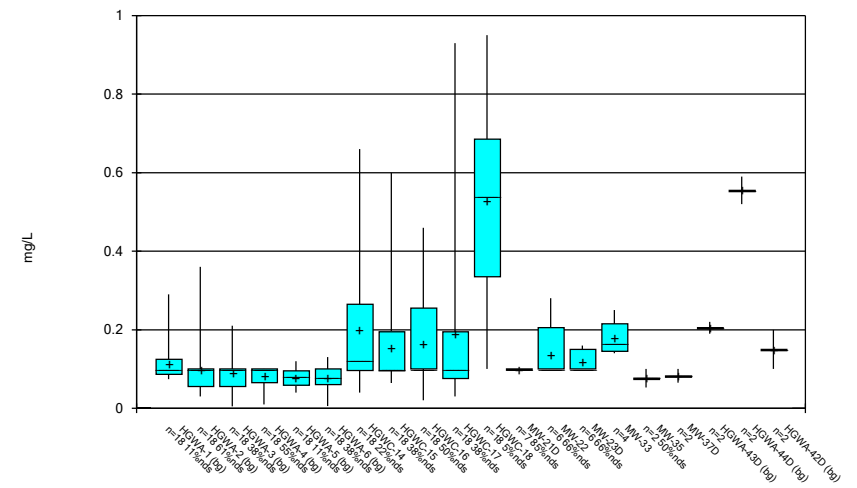
Constituent: Combined Radium 226 + 228 Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



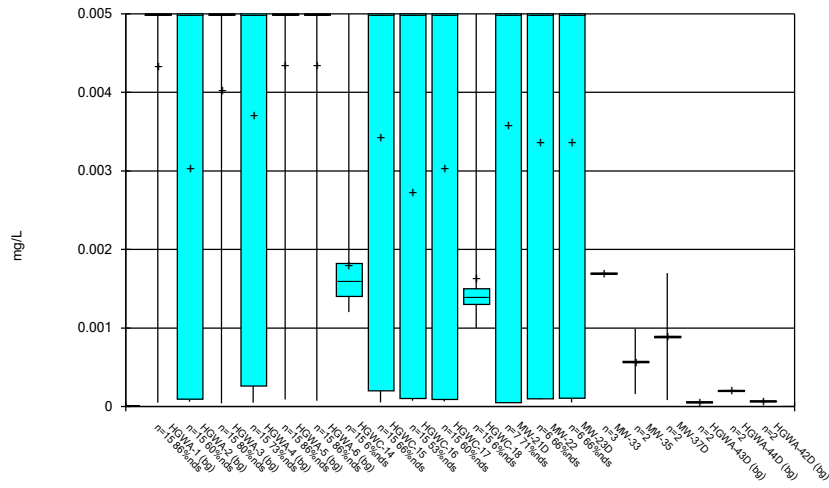
Constituent: Field pH Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



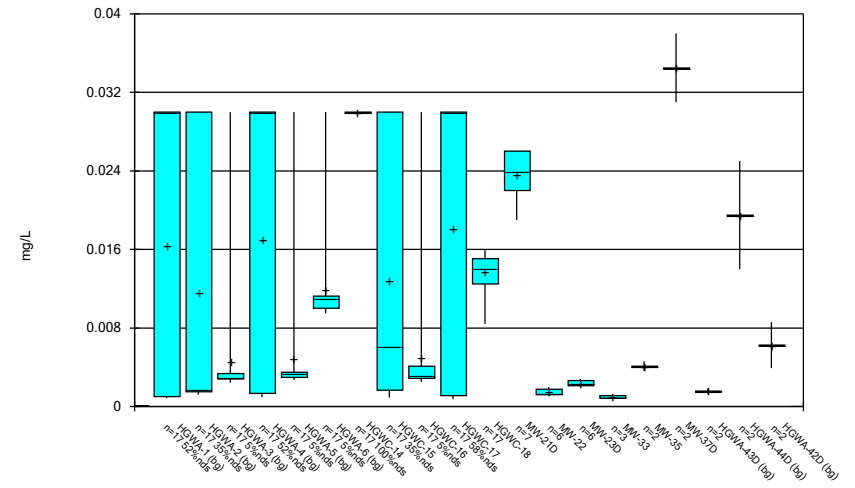
Constituent: Fluoride Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



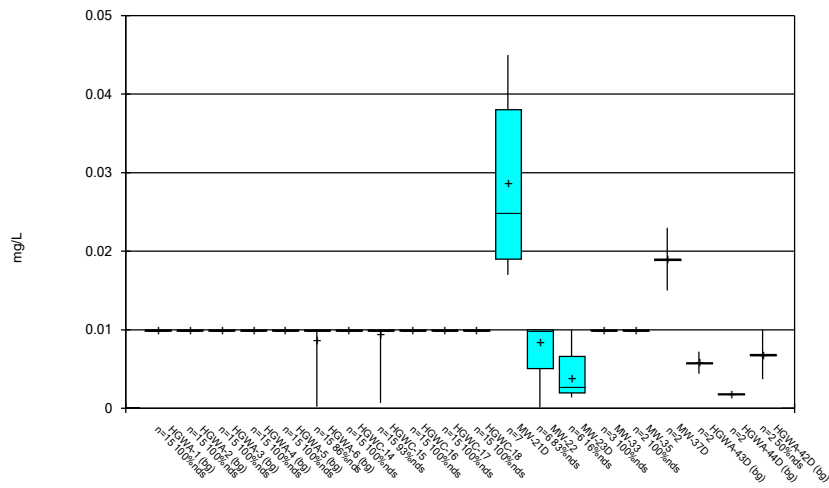
Constituent: Lead Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



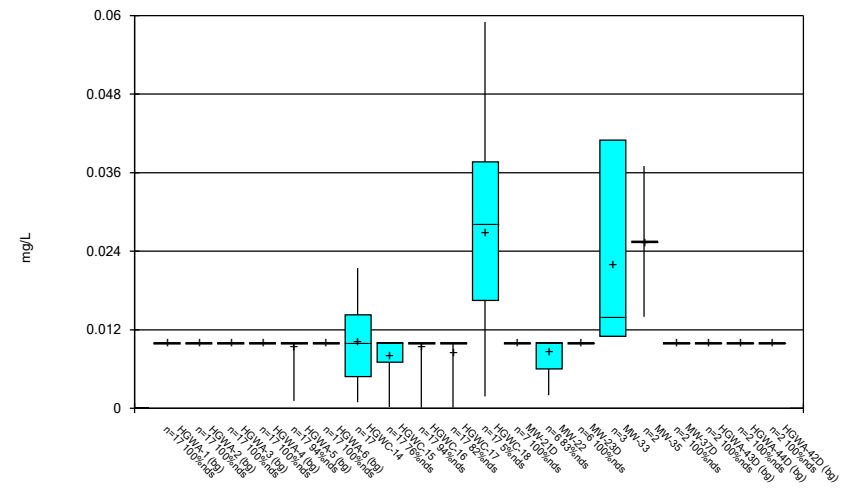
Constituent: Lithium Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



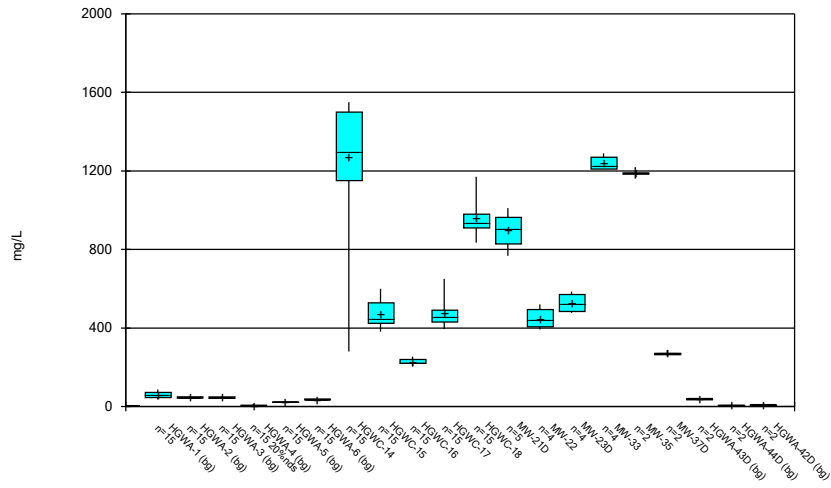
Constituent: Molybdenum Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



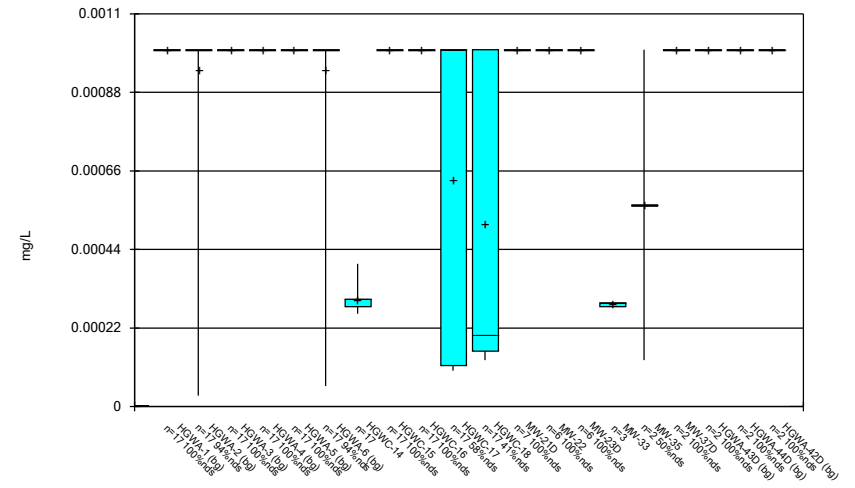
Constituent: Selenium Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



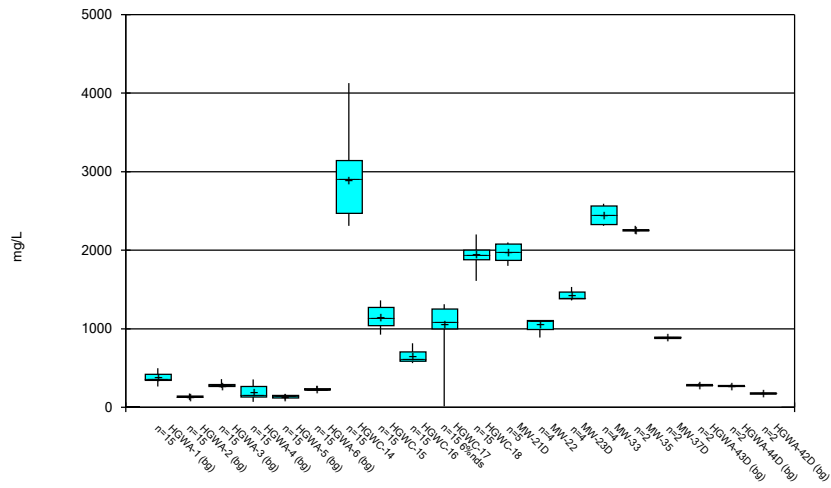
Constituent: Sulfate Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Thallium Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 2/10/2021 3:22 PM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE C.

Outlier Summary

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 11/13/2020, 1:38 PM

None

FIGURE D.

Interwell Prediction Limits - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/7/2021, 11:38 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.29	n/a	9/18/2020	11	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-15	0.29	n/a	9/17/2020	2.2	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-16	0.29	n/a	9/17/2020	2.4	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-17	0.29	n/a	9/16/2020	6.7	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-18	0.29	n/a	9/15/2020	9.4	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-14	138	n/a	9/18/2020	623	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-15	138	n/a	9/17/2020	188	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-16	138	n/a	9/17/2020	190	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-17	138	n/a	9/16/2020	277	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-18	138	n/a	9/15/2020	430	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	9/18/2020	288	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	9/17/2020	108	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	9/17/2020	99.3	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	9/16/2020	156	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	9/15/2020	150	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.84	4.9	9/18/2020	4.88	Yes	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.84	4.9	9/15/2020	4.47	Yes	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	9/18/2020	1260	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	9/17/2020	416	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	9/17/2020	254	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	9/16/2020	467	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	9/15/2020	1080	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	417	n/a	9/18/2020	2440	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	417	n/a	9/17/2020	956	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	417	n/a	9/17/2020	804	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	417	n/a	9/16/2020	1220	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	417	n/a	9/15/2020	1890	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

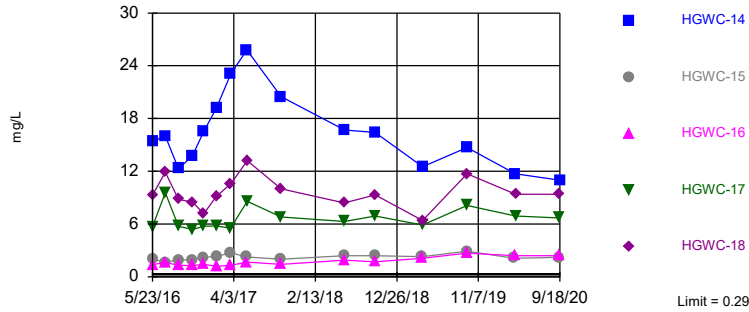
Interwell Prediction Limits - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/7/2021, 11:38 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.29	n/a	9/18/2020	11	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-15	0.29	n/a	9/17/2020	2.2	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-16	0.29	n/a	9/17/2020	2.4	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-17	0.29	n/a	9/16/2020	6.7	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-18	0.29	n/a	9/15/2020	9.4	Yes	96	n/a	n/a	6.25	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-14	138	n/a	9/18/2020	623	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-15	138	n/a	9/17/2020	188	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-16	138	n/a	9/17/2020	190	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-17	138	n/a	9/16/2020	277	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-18	138	n/a	9/15/2020	430	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	9/18/2020	288	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	9/17/2020	108	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	9/17/2020	99.3	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	9/16/2020	156	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	9/15/2020	150	Yes	96	n/a	n/a	0	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.84	4.9	9/18/2020	4.88	Yes	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-15	7.84	4.9	9/17/2020	6.11	No	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-16	7.84	4.9	9/17/2020	7.11	No	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-17	7.84	4.9	9/16/2020	6.35	No	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.84	4.9	9/15/2020	4.47	Yes	114	n/a	n/a	0	n/a	n/a	0.0003051	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-14	0.59	n/a	9/18/2020	0.1ND	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-15	0.59	n/a	9/17/2020	0.1ND	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-16	0.59	n/a	9/17/2020	0.1ND	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-17	0.59	n/a	9/16/2020	0.058J	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.59	n/a	9/15/2020	0.31	No	114	n/a	n/a	34.21	n/a	n/a	0.0001526	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	9/18/2020	1260	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	9/17/2020	416	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	9/17/2020	254	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	9/16/2020	467	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	9/15/2020	1080	Yes	96	n/a	n/a	3.125	n/a	n/a	0.0002111	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	417	n/a	9/18/2020	2440	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	417	n/a	9/17/2020	956	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	417	n/a	9/17/2020	804	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	417	n/a	9/16/2020	1220	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	417	n/a	9/15/2020	1890	Yes	96	14.75	3.137	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Exceeds Limit: HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Prediction Limit Interwell Non-parametric

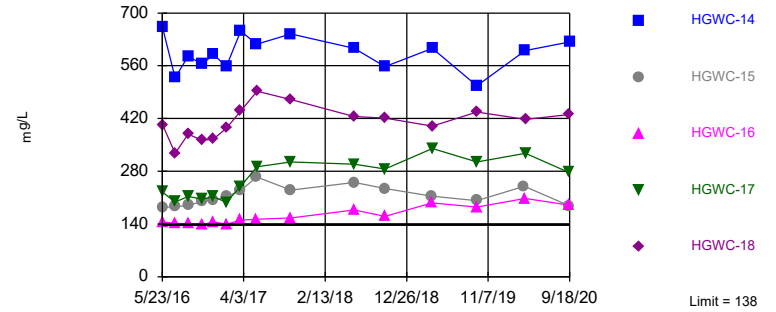


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 96 background values. 6.25% NDs. Annual per-constituent alpha = 0.002109. Individual comparison alpha = 0.0002111 (1 of 2). Comparing 5 points to limit.

Constituent: Boron Analysis Run 1/7/2021 11:30 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Prediction Limit Interwell Non-parametric

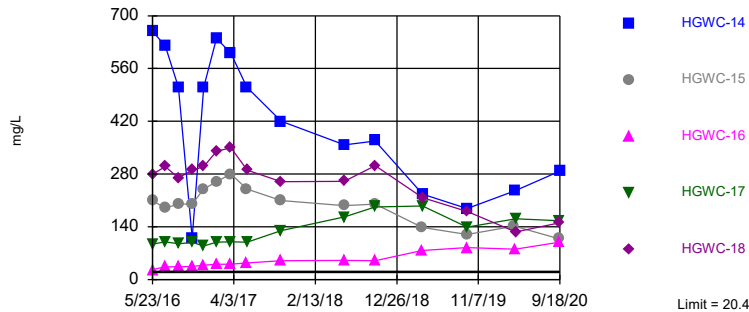


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 96 background values. Annual per-constituent alpha = 0.002109. Individual comparison alpha = 0.0002111 (1 of 2). Comparing 5 points to limit.

Constituent: Calcium Analysis Run 1/7/2021 11:30 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Prediction Limit Interwell Non-parametric

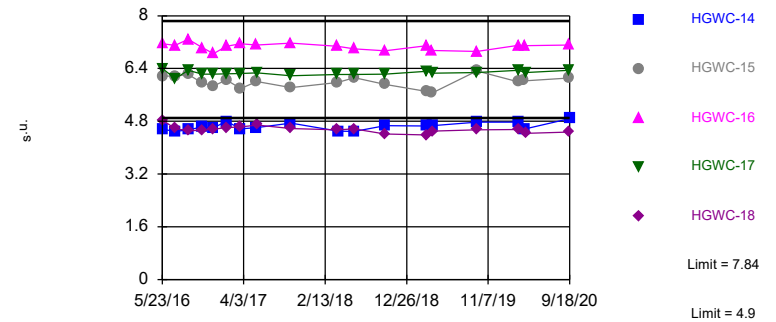


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 96 background values. Annual per-constituent alpha = 0.002109. Individual comparison alpha = 0.0002111 (1 of 2). Comparing 5 points to limit.

Constituent: Chloride Analysis Run 1/7/2021 11:30 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limits: HGWC-14, HGWC-18

Prediction Limit Interwell Non-parametric

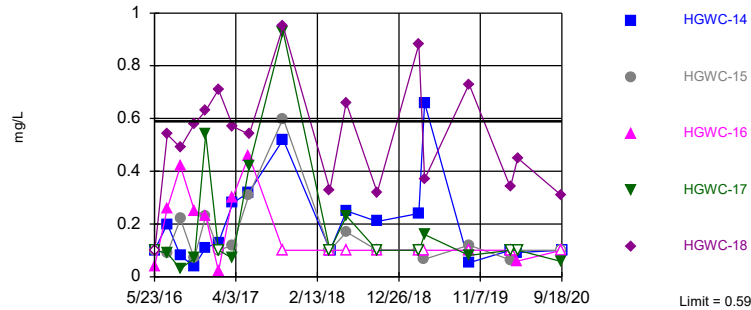


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 114 background values. Annual per-constituent alpha = 0.003049. Individual comparison alpha = 0.0003051 (1 of 2). Comparing 5 points to limit.

Constituent: Field pH Analysis Run 1/7/2021 11:30 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Within Limit

Prediction Limit
Interwell Non-parametric

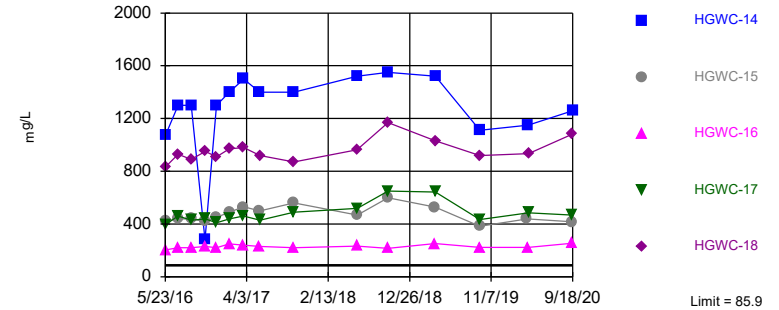


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 114 background values. 34.21% NDs. Annual per-constituent alpha = 0.001525. Individual comparison alpha = 0.0001526 (1 of 2). Comparing 5 points to limit.

Constituent: Fluoride Analysis Run 1/7/2021 11:30 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15,
HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Non-parametric

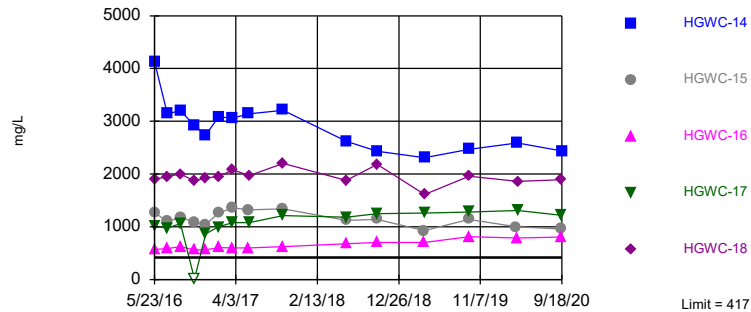


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 96 background values. 3.125% NDs. Annual per-constituent alpha = 0.002109. Individual comparison alpha = 0.0002111 (1 of 2). Comparing 5 points to limit.

Constituent: Sulfate Analysis Run 1/7/2021 11:30 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15,
HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Parametric



Background Data Summary (based on square root transformation): Mean=14.75, Std. Dev.=3.137, n=96. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9754, critical = 0.965. Kappa = 1.808 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

Constituent: Total Dissolved Solids Analysis Run 1/7/2021 11:30 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 1/7/2021 11:38 AM View: PL's - Interwell
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-15	HGWC-18	HGWA-44D (bg)	HGWA-43D (bg)	HGWA-42D (bg)
5/19/2016					
5/20/2016					
5/23/2016	2.02				
5/24/2016		9.33			
7/11/2016					
7/12/2016	1.65	11.9			
8/30/2016					
9/1/2016	1.93	8.8			
10/19/2016					
10/20/2016					
10/24/2016	1.93				
10/25/2016		8.5			
12/6/2016					
12/7/2016	2.23				
12/8/2016		7.15			
1/24/2017					
1/26/2017	2.31	9.17			
3/21/2017					
3/22/2017					
3/23/2017	2.72	10.6			
5/22/2017					
5/23/2017					
5/24/2017	2.26				
5/25/2017		13.2			
10/3/2017					
10/4/2017	2	10			
6/4/2018					
6/5/2018		8.4			
6/6/2018	2.4				
10/1/2018					
10/2/2018					
10/3/2018	2.4	9.3			
4/1/2019					
4/2/2019					
4/4/2019	2.3				
4/5/2019		6.4			
9/23/2019					
9/24/2019	2.9				
9/25/2019		11.7			
3/25/2020					
3/26/2020	2.1				
3/30/2020					
3/31/2020		9.4			
9/15/2020		9.4			
9/16/2020			0.23	0.061 (J)	
9/17/2020	2.2				0.098 (J)
9/18/2020					
11/10/2020			0.29	0.057 (J)	
11/11/2020					0.058 (J)

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 1/7/2021 11:38 AM View: PL's - Interwell
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-15	HGWC-18	HGWA-44D (bg)	HGWA-43D (bg)	HGWA-42D (bg)
5/19/2016					
5/20/2016					
5/23/2016	184				
5/24/2016		403			
7/11/2016					
7/12/2016	186	328			
8/30/2016					
9/1/2016	189	379			
10/19/2016					
10/20/2016					
10/24/2016	200				
10/25/2016		362			
12/6/2016					
12/7/2016	203				
12/8/2016		366			
1/24/2017					
1/26/2017	212	394			
3/21/2017					
3/22/2017					
3/23/2017	229	440			
5/22/2017					
5/23/2017					
5/24/2017	265				
5/25/2017		492			
10/3/2017					
10/4/2017	230	470			
6/4/2018					
6/5/2018		425			
6/6/2018	250				
10/1/2018					
10/2/2018					
10/3/2018	234	421			
4/1/2019					
4/2/2019					
4/4/2019	214				
4/5/2019		400			
9/23/2019					
9/24/2019	202				
9/25/2019		437			
3/25/2020					
3/26/2020	240				
3/30/2020					
3/31/2020		418			
9/15/2020		430			
9/16/2020			30	56	
9/17/2020	188				43.8
9/18/2020					
11/10/2020			33.6	63.3	
11/11/2020					44.4

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 1/7/2021 11:38 AM View: PL's - Interwell
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-15	HGWC-18	HGWA-44D (bg)	HGWA-43D (bg)	HGWA-42D (bg)
5/19/2016					
5/20/2016					
5/23/2016	209				
5/24/2016		280			
7/11/2016					
7/12/2016	190	300			
8/30/2016					
9/1/2016	200	270			
10/19/2016					
10/20/2016					
10/24/2016	200				
10/25/2016		290			
12/6/2016					
12/7/2016	240				
12/8/2016		300			
1/24/2017					
1/26/2017	260	340			
3/21/2017					
3/22/2017					
3/23/2017	280	350			
5/22/2017					
5/23/2017					
5/24/2017	240				
5/25/2017		290			
10/3/2017					
10/4/2017	210	260			
6/4/2018					
6/5/2018		261			
6/6/2018	196				
10/1/2018					
10/2/2018					
10/3/2018	200	302			
4/1/2019					
4/2/2019					
4/4/2019	138				
4/5/2019		217			
9/23/2019					
9/24/2019	120				
9/25/2019		181			
3/25/2020					
3/26/2020	142				
3/30/2020					
3/31/2020		126			
9/15/2020		150			
9/16/2020			7.2	4.1	
9/17/2020	108				5.8
9/18/2020					
11/10/2020			7.8	4.4	
11/11/2020					3.1

Prediction Limit

Constituent: Field pH (s.u.) Analysis Run 1/7/2021 11:38 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-15	HGWC-18	HGWA-44D (bg)	HGWA-43D (bg)	HGWA-42D (bg)
5/19/2016					
5/20/2016					
5/23/2016	6.17				
5/24/2016		4.83			
7/11/2016					
7/12/2016	6.17	4.58			
8/30/2016					
9/1/2016	6.22	4.51			
10/19/2016					
10/20/2016					
10/24/2016	5.97				
10/25/2016		4.53			
12/6/2016					
12/7/2016	5.87				
12/8/2016		4.56			
1/24/2017					
1/26/2017	6.05	4.61			
3/21/2017					
3/22/2017					
3/23/2017	5.79	4.63			
5/22/2017					
5/23/2017					
5/24/2017	6.01				
5/25/2017		4.69			
10/3/2017					
10/4/2017	5.82	4.58			
4/2/2018					
4/3/2018	5.98	4.54			
4/4/2018					
6/4/2018					
6/5/2018		4.57			
6/6/2018	6.12				
10/1/2018					
10/2/2018					
10/3/2018	5.92	4.41			
3/11/2019					
3/12/2019					
3/14/2019	5.71	4.39			
3/15/2019					
4/1/2019					
4/2/2019					
4/4/2019	5.66				
4/5/2019		4.5			
9/23/2019					
9/24/2019	6.33				
9/25/2019		4.54			
3/2/2020					
3/3/2020	6	4.55			
3/25/2020					
3/26/2020	6.03				
3/30/2020					
3/31/2020		4.43			

Prediction Limit

Constituent: Field pH (s.u.) Analysis Run 1/7/2021 11:38 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-15	HGWC-18	HGWA-44D (bg)	HGWA-43D (bg)	HGWA-42D (bg)
9/15/2020		4.47			
9/16/2020			7.83	7.52	
9/17/2020	6.11				7.62
9/18/2020					
11/10/2020			7.84	7.27	
11/11/2020					7.68

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 1/7/2021 11:38 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-15	HGWC-18	HGWA-44D (bg)	HGWA-43D (bg)	HGWA-42D (bg)
5/19/2016					
5/20/2016					
5/23/2016	<0.1				
5/24/2016		<0.1			
7/11/2016					
7/12/2016	0.09 (J)	0.54			
8/30/2016					
9/1/2016	0.22 (J)	0.49			
10/19/2016					
10/20/2016					
10/24/2016	0.07 (J)				
10/25/2016		0.58			
12/6/2016					
12/7/2016	0.23 (J)				
12/8/2016		0.63			
1/24/2017					
1/26/2017	<0.1	0.71			
3/21/2017					
3/22/2017					
3/23/2017	0.12 (J)	0.57			
5/22/2017					
5/23/2017					
5/24/2017	0.31				
5/25/2017		0.54			
10/3/2017					
10/4/2017	0.6	0.95			
4/2/2018					
4/3/2018	<0.1	0.33			
4/4/2018					
6/4/2018					
6/5/2018		0.66			
6/6/2018	0.17 (J)				
10/1/2018					
10/2/2018					
10/3/2018	<0.1	0.32			
3/11/2019					
3/12/2019					
3/14/2019	<0.1	0.88			
3/15/2019					
4/1/2019					
4/2/2019					
4/4/2019	0.066 (J)				
4/5/2019		0.37			
9/23/2019					
9/24/2019	0.12 (J)				
9/25/2019		0.73			
3/2/2020					
3/3/2020	0.064 (J)	0.34			
3/25/2020					
3/26/2020	<0.1				
3/30/2020					
3/31/2020		0.45			

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 1/7/2021 11:38 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-15	HGWC-18	HGWA-44D (bg)	HGWA-43D (bg)	HGWA-42D (bg)
9/15/2020		0.31			
9/16/2020			0.52	0.22	
9/17/2020	<0.1				0.2
9/18/2020					
11/10/2020			0.59	0.19	
11/11/2020					0.1

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 1/7/2021 11:38 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-15	HGWC-18	HGWA-44D (bg)	HGWA-43D (bg)	HGWA-42D (bg)
5/19/2016					
5/20/2016					
5/23/2016	424				
5/24/2016		834			
7/11/2016					
7/12/2016	440	930			
8/30/2016					
9/1/2016	440	890			
10/19/2016					
10/20/2016					
10/24/2016	420				
10/25/2016		950			
12/6/2016					
12/7/2016	450				
12/8/2016		910			
1/24/2017					
1/26/2017	490	970			
3/21/2017					
3/22/2017					
3/23/2017	530	980			
5/22/2017					
5/23/2017					
5/24/2017	500				
5/25/2017		920			
10/3/2017					
10/4/2017	560	870			
6/4/2018					
6/5/2018		962			
6/6/2018	469				
10/1/2018					
10/2/2018					
10/3/2018	600	1170			
4/1/2019					
4/2/2019					
4/4/2019	528				
4/5/2019		1030			
9/23/2019					
9/24/2019	382				
9/25/2019		920			
3/25/2020					
3/26/2020	438				
3/30/2020					
3/31/2020		934			
9/15/2020		1080			
9/16/2020			6.9	43	
9/17/2020	416				10.9
9/18/2020					
11/10/2020			6.3	39	
11/11/2020					9.4

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 1/7/2021 11:38 AM View: PL's - Interwell
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-15	HGWC-18	HGWA-44D (bg)	HGWA-43D (bg)	HGWA-42D (bg)
5/19/2016					
5/20/2016					
5/23/2016	1270				
5/24/2016		1900			
7/11/2016					
7/12/2016	1100	1950			
8/30/2016					
9/1/2016	1180	2000			
10/19/2016					
10/20/2016					
10/24/2016	1090				
10/25/2016		1870			
12/6/2016					
12/7/2016	1040				
12/8/2016		1930			
1/24/2017					
1/26/2017	1260	1950			
3/21/2017					
3/22/2017					
3/23/2017	1360	2080			
5/22/2017					
5/23/2017					
5/24/2017	1320				
5/25/2017		1970			
10/3/2017					
10/4/2017	1340	2200			
6/4/2018					
6/5/2018		1880			
6/6/2018	1120				
10/1/2018					
10/2/2018					
10/3/2018	1140	2180			
4/1/2019					
4/2/2019					
4/4/2019	926				
4/5/2019		1610			
9/23/2019					
9/24/2019	1140				
9/25/2019		1960			
3/25/2020					
3/26/2020	1000				
3/30/2020					
3/31/2020		1860			
9/15/2020		1890			
9/16/2020			270	272	
9/17/2020	956				188
9/18/2020					
11/10/2020			287	307	
11/11/2020					175

FIGURE E.

Trend Test Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/12/2021, 3:23 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-2 (bg)	0.002014	57	53	Yes	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-16	0.2698	66	53	Yes	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	13.93	76	53	Yes	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	32.12	56	53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3214	-70	-53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-103.3	-58	-53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	15.6	97	53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	17.37	65	53	Yes	15	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.222	-72	-68	Yes	18	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	1.825	55	53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-14	-210.6	-58	-53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.37	75	53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	87.15	76	53	Yes	15	6.667	n/a	n/a	0.01	NP

Trend Test Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/12/2021, 3:23 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	0.0006083	5	53	No	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-2 (bg)	0.002014	57	53	Yes	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-3 (bg)	-0.0007757	-29	-53	No	15	13.33	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-4 (bg)	-0.001371	-40	-53	No	15	6.667	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-5 (bg)	-0.0001134	-6	-53	No	15	13.33	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-6 (bg)	-0.0006759	-25	-53	No	15	6.667	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-14	-0.8111	-19	-53	No	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-15	0.1028	39	53	No	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-16	0.2698	66	53	Yes	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-17	0.2527	32	53	No	15	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-18	0.01622	2	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-1 (bg)	4.855	39	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-2 (bg)	0.02596	1	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-3 (bg)	2.796	35	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-4 (bg)	-7.835	-41	-53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-5 (bg)	-0.484	-14	-53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-6 (bg)	0.2411	11	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-14	0	1	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	13.06	43	53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	13.93	76	53	Yes	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	32.12	56	53	Yes	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-18	16.15	37	53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-1 (bg)	1.697	30	53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-2 (bg)	-0.238	-41	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-3 (bg)	-0.04784	-14	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3214	-70	-53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-5 (bg)	-0.06309	-20	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-6 (bg)	-0.08277	-31	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-103.3	-58	-53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-15	-23.36	-41	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	15.6	97	53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	17.37	65	53	Yes	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-18	-31.78	-45	-53	No	15	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-1 (bg)	-0.03213	-41	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-2 (bg)	-0.05778	-45	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-3 (bg)	-0.00841	-13	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.222	-72	-68	Yes	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-5 (bg)	-0.0438	-52	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-6 (bg)	-0.03342	-41	-68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-14	0.04798	59	68	No	18	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-18	-0.03586	-59	-68	No	18	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-1 (bg)	6.275	40	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-2 (bg)	1.235	49	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	1.825	55	53	Yes	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-4 (bg)	-0.7339	-49	-53	No	15	20	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-5 (bg)	-0.1282	-8	-53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-6 (bg)	0.2987	14	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-14	79.93	26	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-15	16.46	12	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-16	4.008	35	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-17	24.83	46	53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-18	33.39	42	53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	11.02	13	53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-3.989	-24	-53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	0	-1	-53	No	15	0	n/a	n/a	0.01	NP

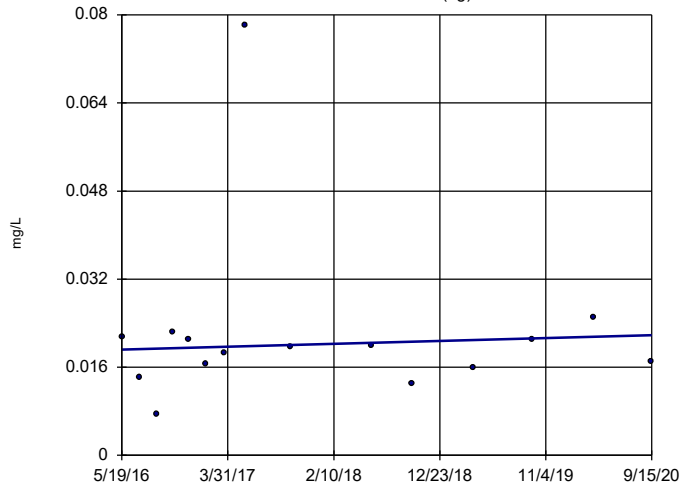
Trend Test Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/12/2021, 3:23 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>
Total Dissolved Solids (mg/L)	HGWA-4 (bg)	-29.52	-46	-53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-5 (bg)	-7.087	-35	-53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-6 (bg)	1.347	6	53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-14	-210.6	-58	-53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-15	-45.11	-28	-53	No	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.37	75	53	Yes	15	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	87.15	76	53	Yes	15	6.667	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-18	-4.279	-6	-53	No	15	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

HGWA-1 (bg)

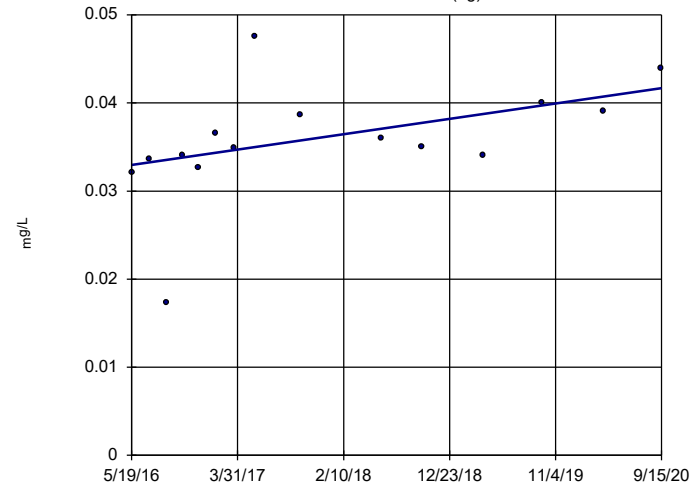


n = 15
 Slope = 0.0006083
 units per year.
 Mann-Kendall
 statistic = 5
 critical = 53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-2 (bg)

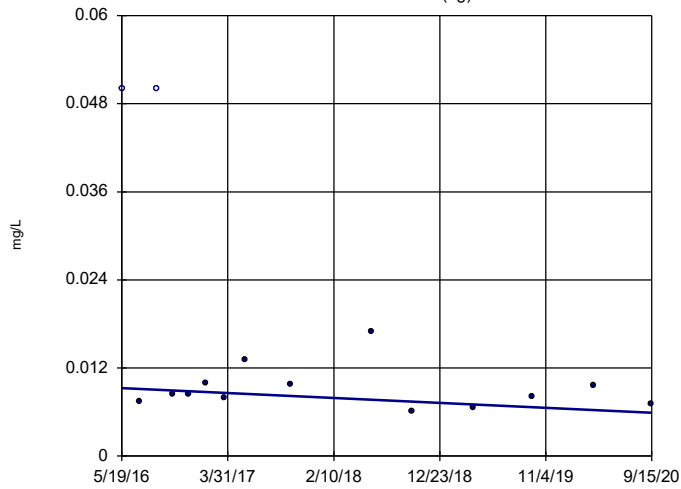


n = 15
 Slope = 0.002014
 units per year.
 Mann-Kendall
 statistic = 57
 critical = 53
 Increasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

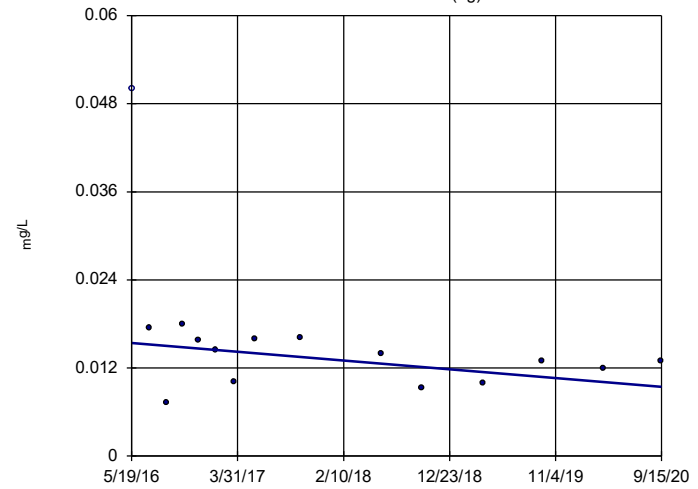


n = 15
 Slope = -0.0007757
 units per year.
 Mann-Kendall
 statistic = -29
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-4 (bg)

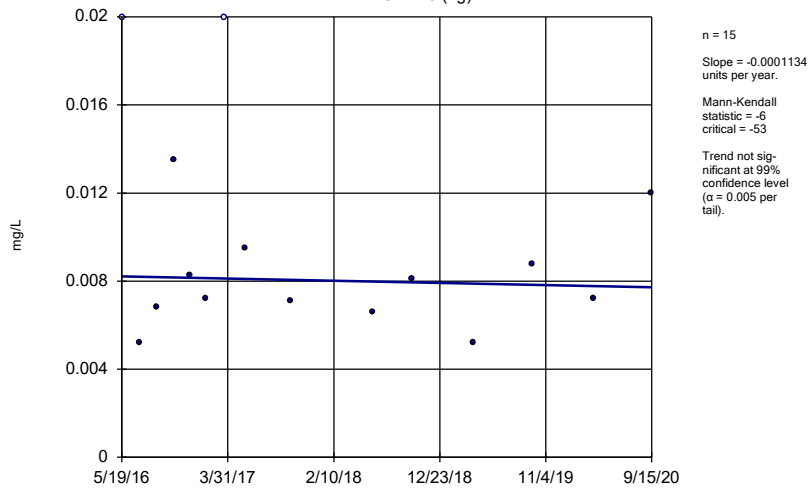


n = 15
 Slope = -0.001371
 units per year.
 Mann-Kendall
 statistic = -40
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

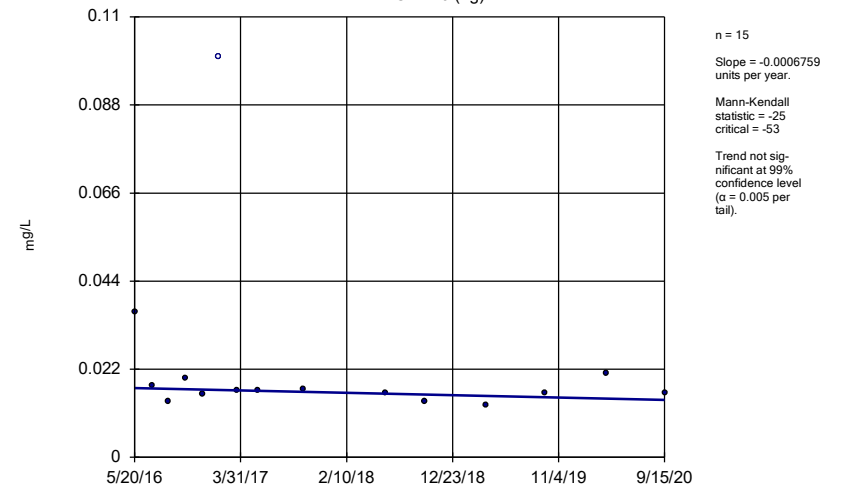
HGWA-5 (bg)



Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

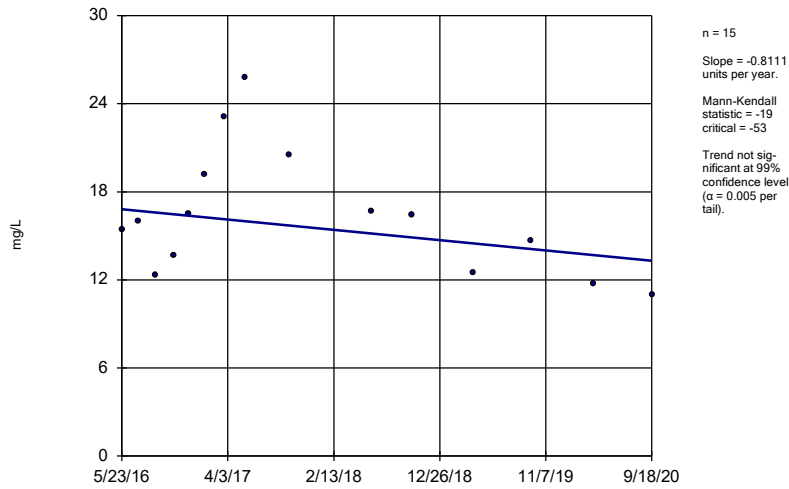
HGWA-6 (bg)



Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

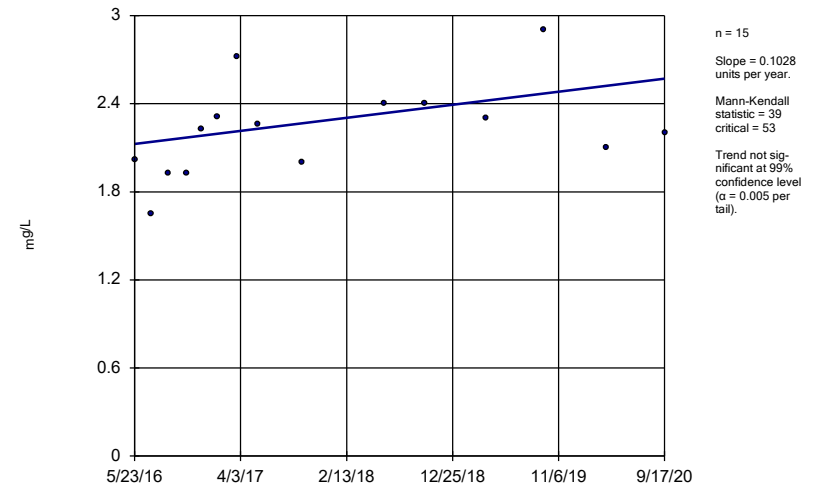
HGWC-14



Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

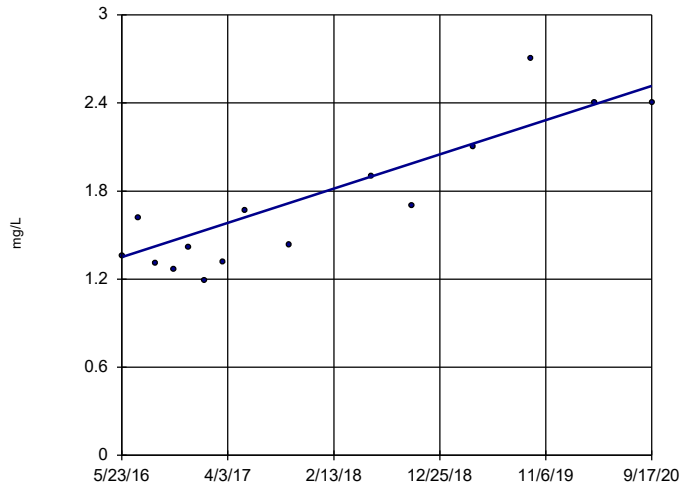
Sen's Slope Estimator

HGWC-15



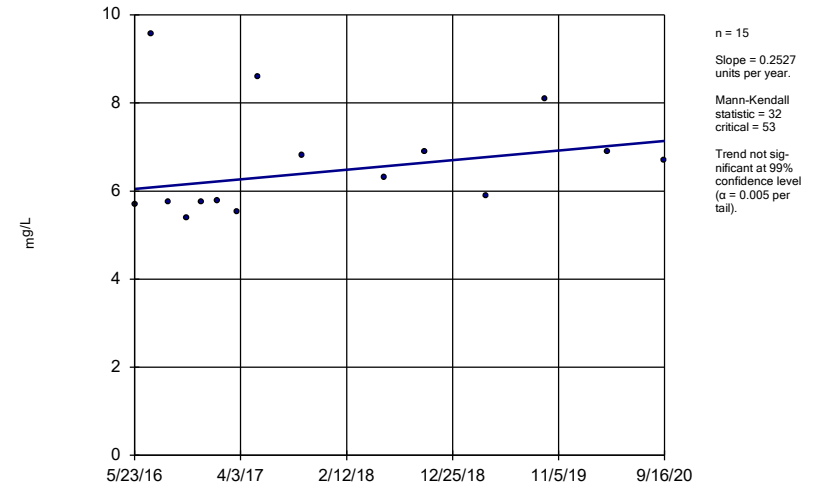
Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-16



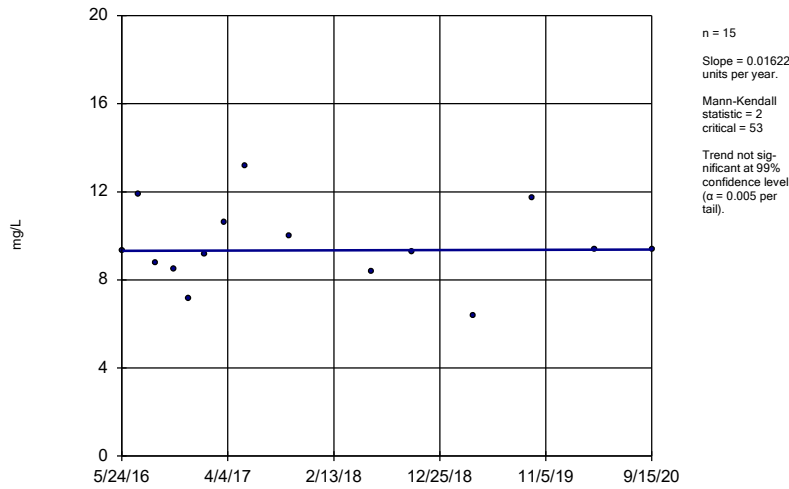
Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-17



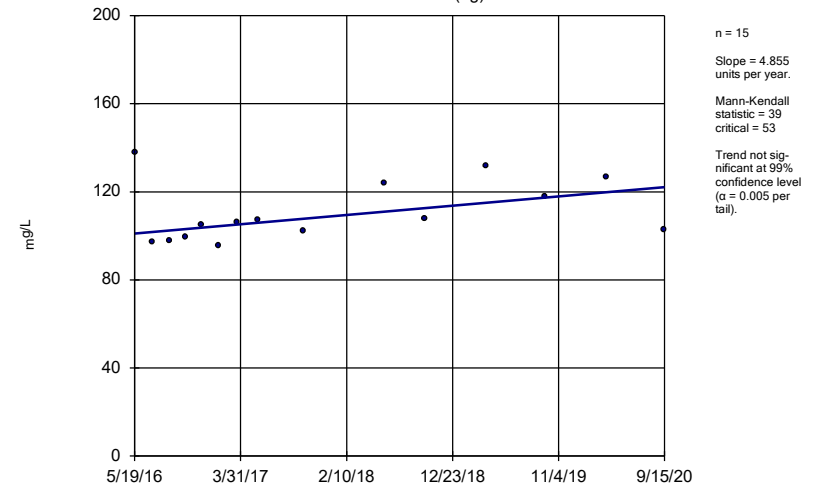
Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-18



Constituent: Boron Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

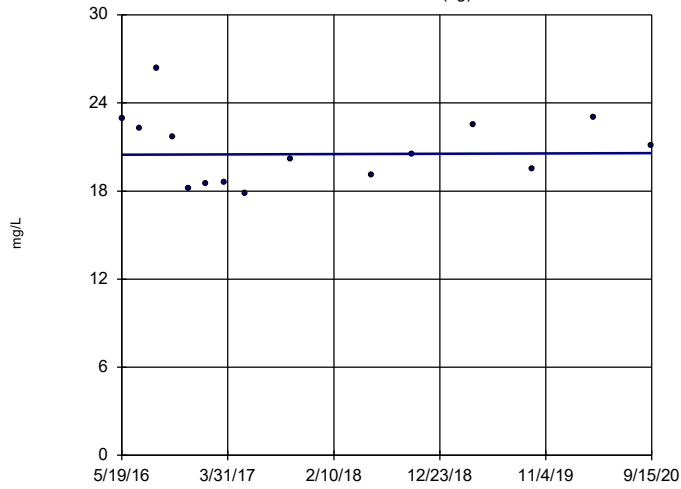
Sen's Slope Estimator HGWA-1 (bg)



Constituent: Calcium Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-2 (bg)

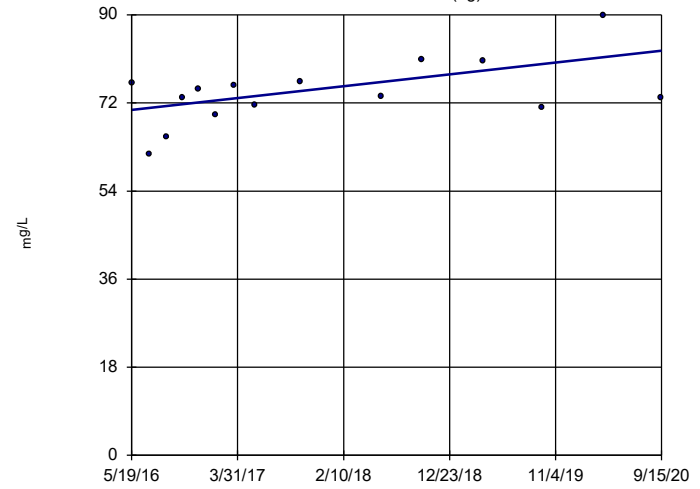


n = 15
 Slope = 0.02596 units per year.
 Mann-Kendall statistic = 1
 critical = 53
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

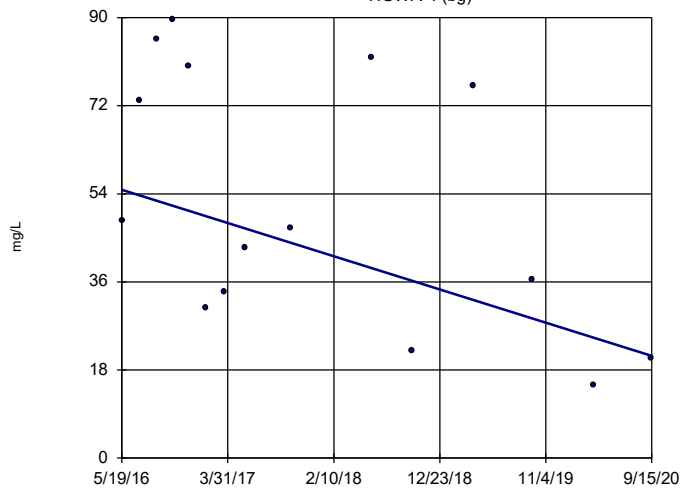


n = 15
 Slope = 2.796 units per year.
 Mann-Kendall statistic = 35
 critical = 53
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-4 (bg)

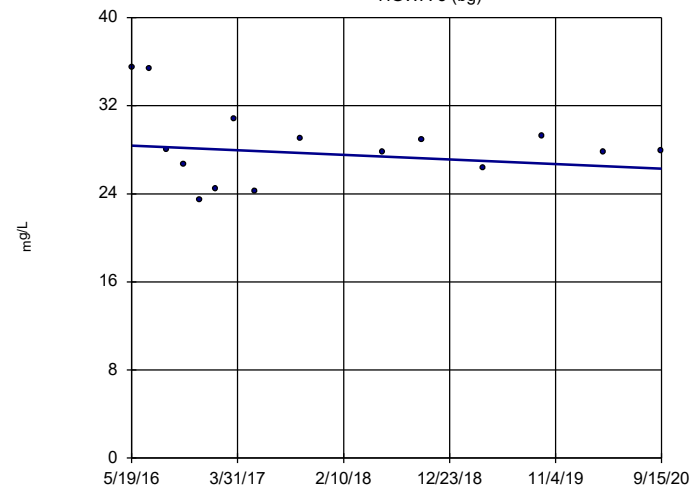


n = 15
 Slope = -7.835 units per year.
 Mann-Kendall statistic = -41
 critical = -53
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-5 (bg)

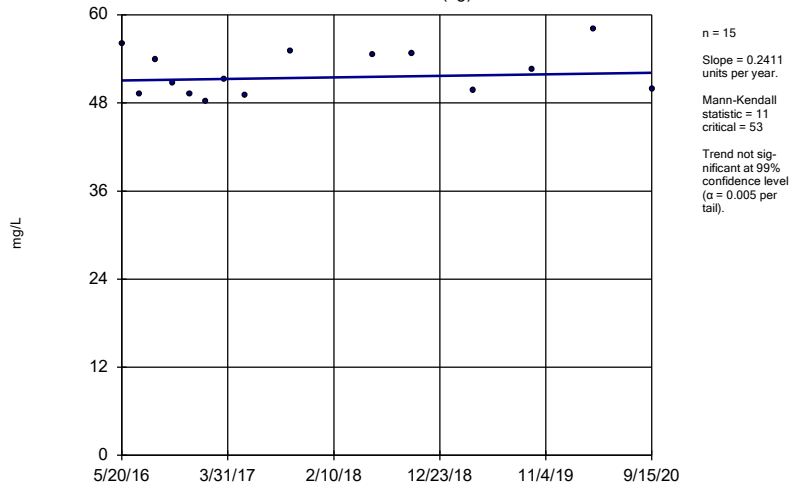


n = 15
 Slope = -0.484 units per year.
 Mann-Kendall statistic = -14
 critical = -53
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

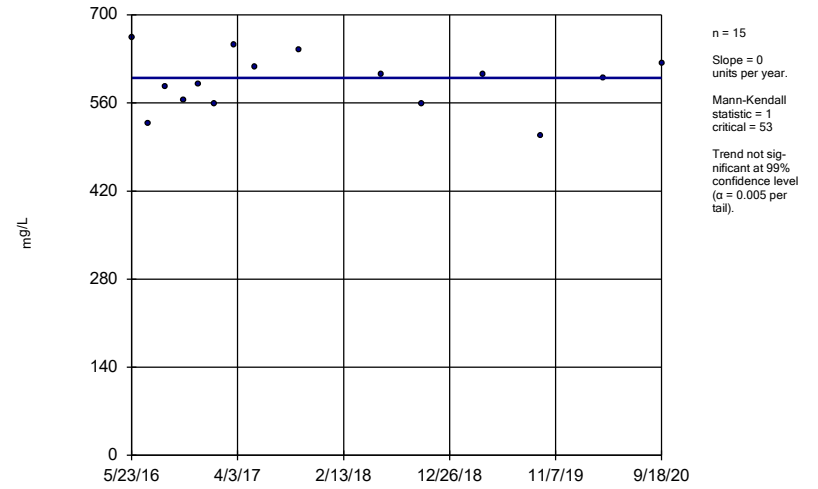
HGWA-6 (bg)



Constituent: Calcium Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

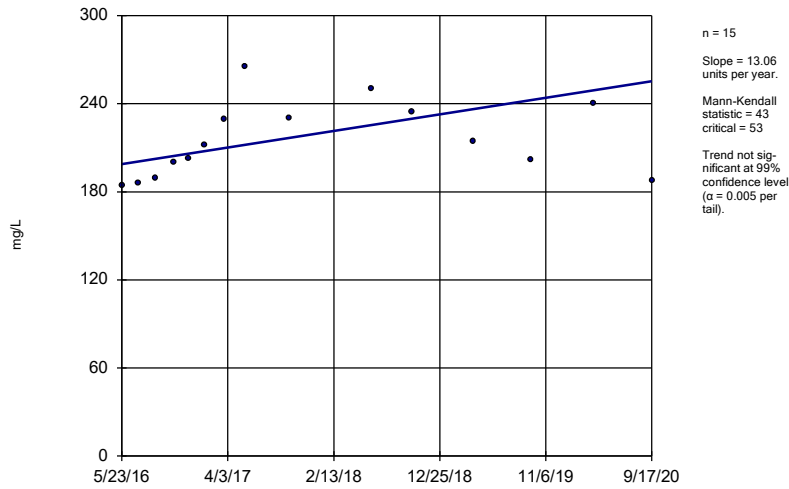
HGWC-14



Constituent: Calcium Analysis Run 11/19/2020 3:30 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

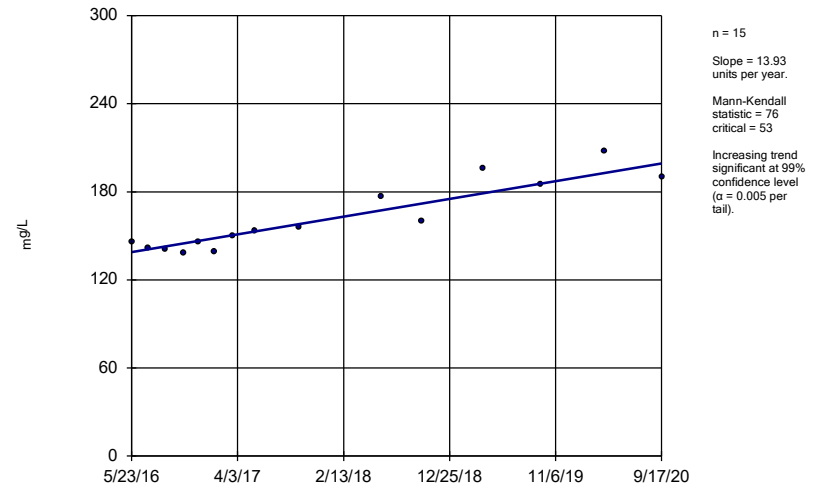
HGWC-15



Constituent: Calcium Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

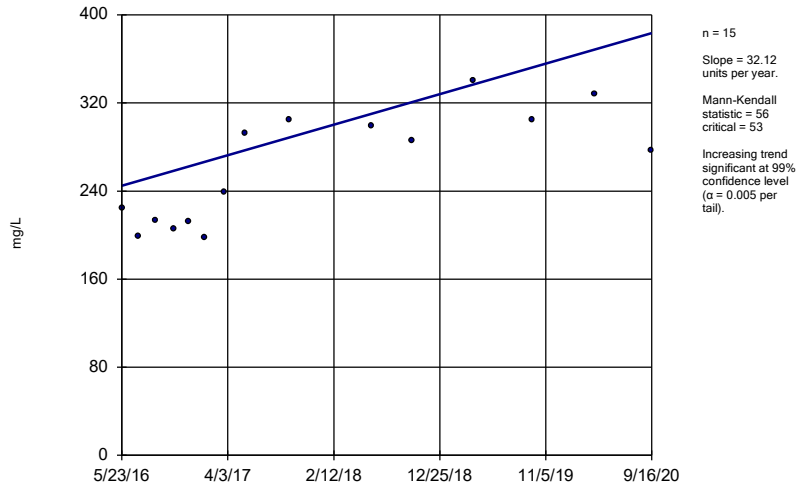
Sen's Slope Estimator

HGWC-16



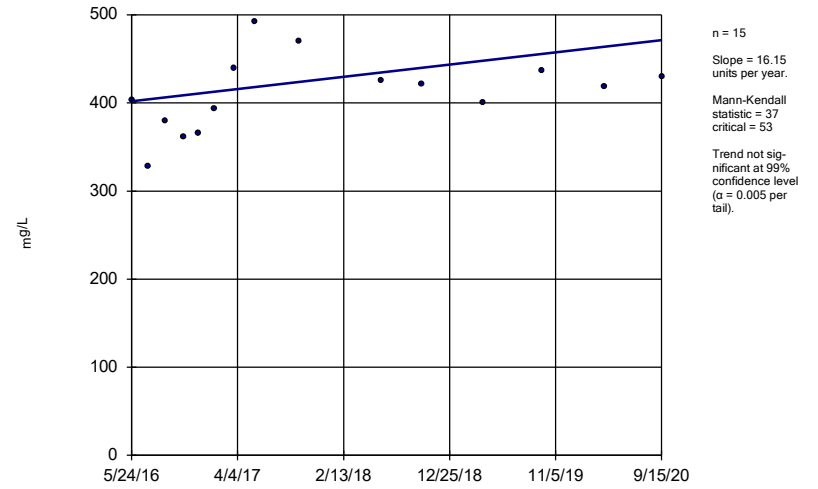
Constituent: Calcium Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-17



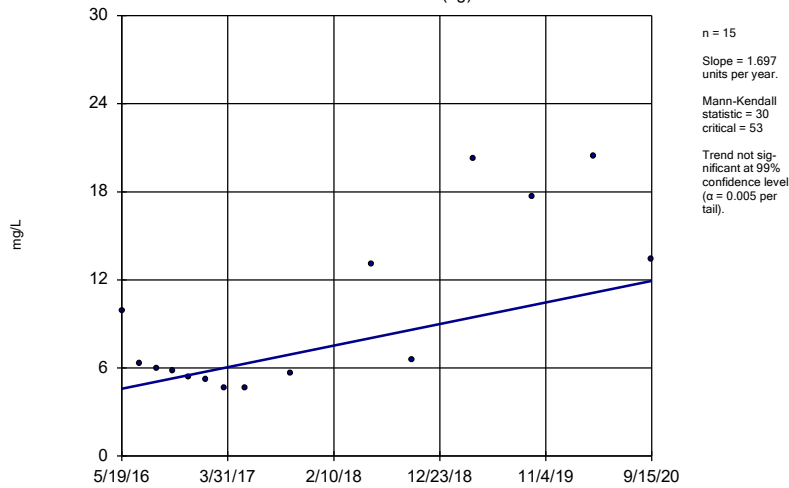
Constituent: Calcium Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-18



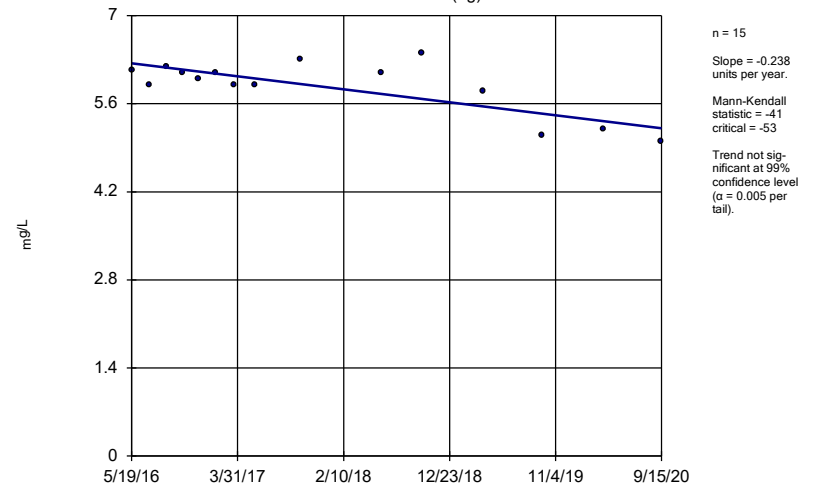
Constituent: Calcium Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWA-1 (bg)



Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

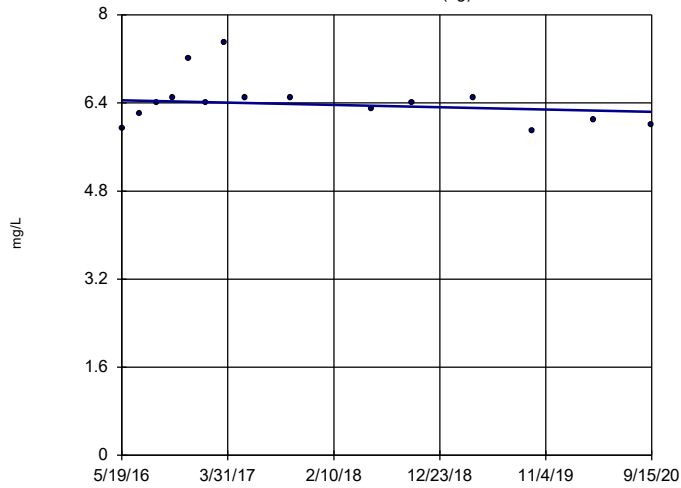
Sen's Slope Estimator
HGWA-2 (bg)



Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

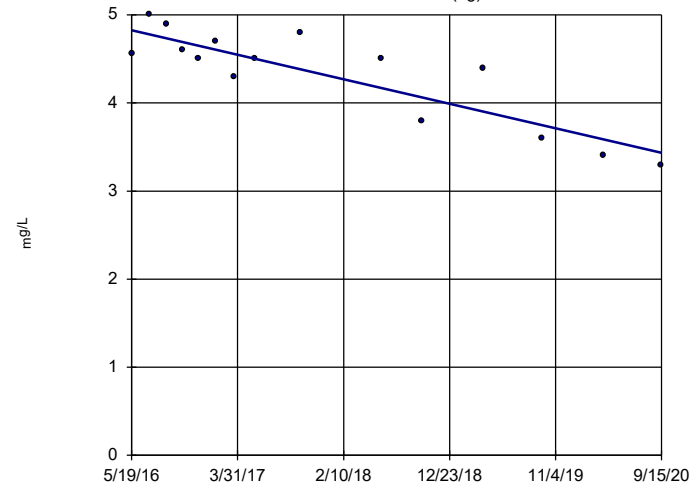


n = 15
 Slope = -0.04784
 units per year.
 Mann-Kendall
 statistic = -14
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-4 (bg)

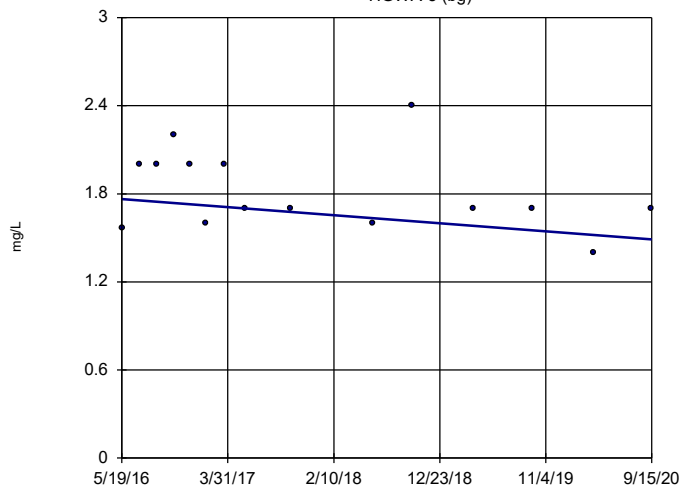


n = 15
 Slope = -0.3214
 units per year.
 Mann-Kendall
 statistic = -70
 critical = -53
 Decreasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-5 (bg)

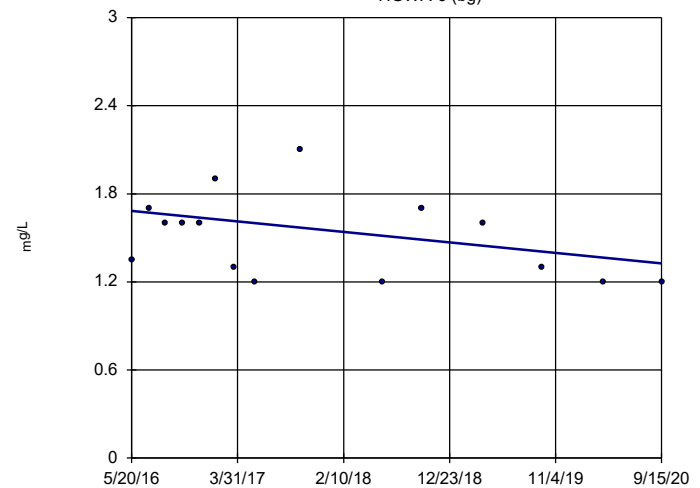


n = 15
 Slope = -0.06309
 units per year.
 Mann-Kendall
 statistic = -20
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-6 (bg)

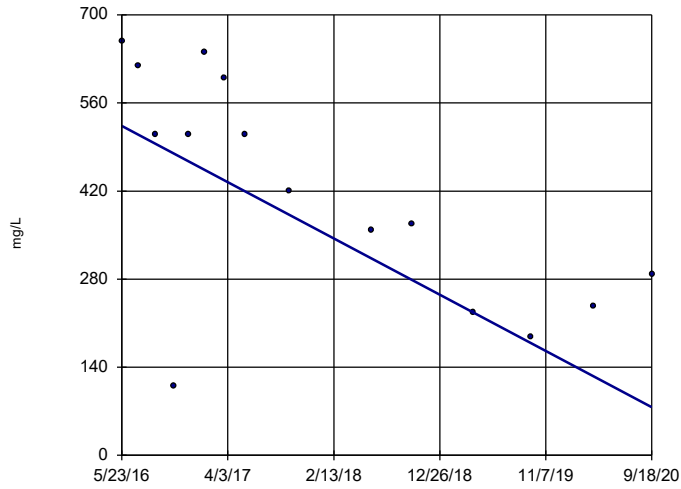


n = 15
 Slope = -0.08277
 units per year.
 Mann-Kendall
 statistic = -31
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-14

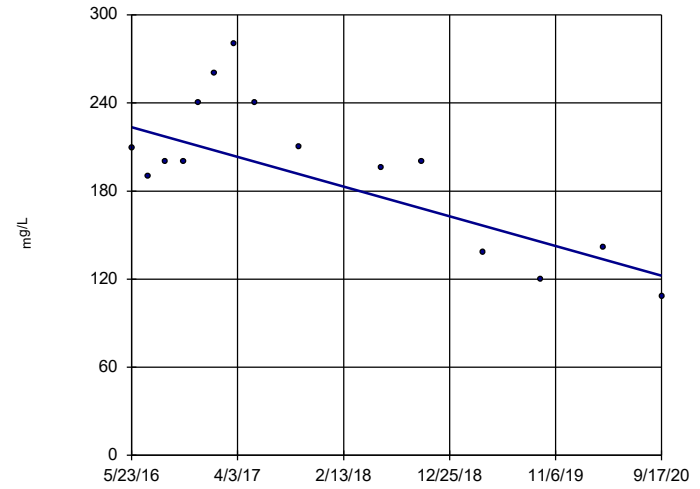


n = 15
 Slope = -103.3
 units per year.
 Mann-Kendall
 statistic = -58
 critical = -53
 Decreasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-15

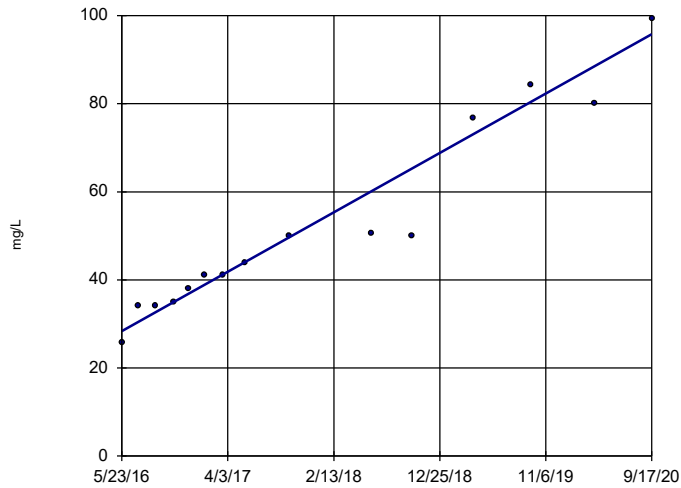


n = 15
 Slope = -23.36
 units per year.
 Mann-Kendall
 statistic = -41
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-16

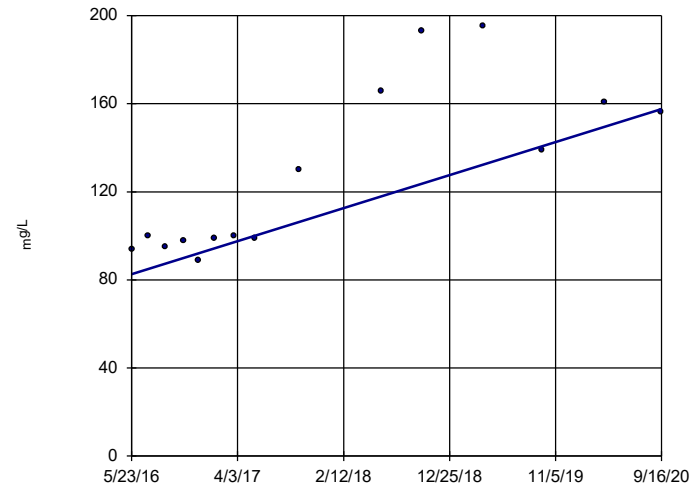


n = 15
 Slope = 15.6
 units per year.
 Mann-Kendall
 statistic = 97
 critical = 53
 Increasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-17

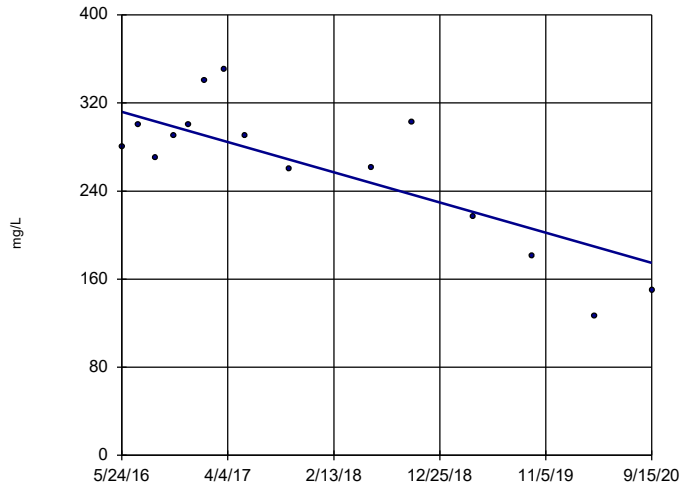


n = 15
 Slope = 17.37
 units per year.
 Mann-Kendall
 statistic = 65
 critical = 53
 Increasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-18

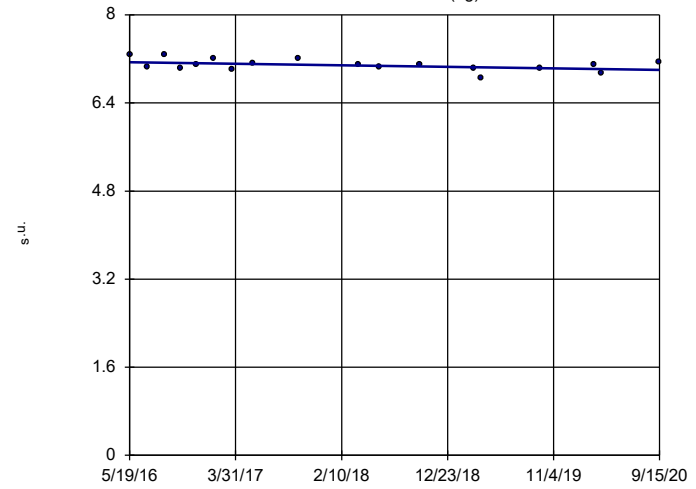


n = 15
 Slope = -31.78
 units per year.
 Mann-Kendall
 statistic = -45
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-1 (bg)

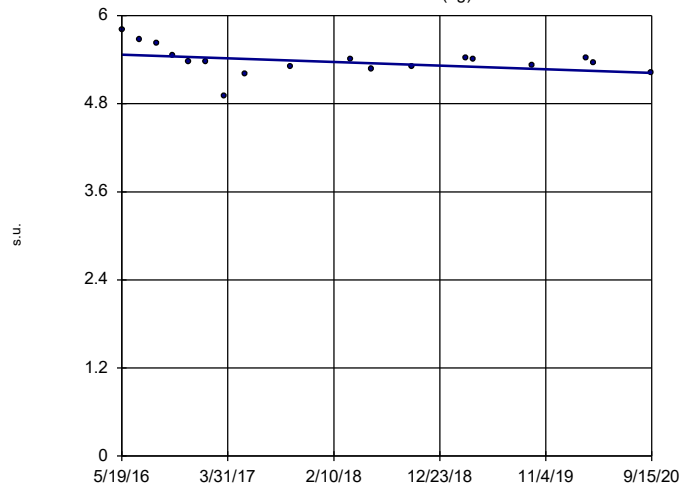


n = 18
 Slope = -0.03213
 units per year.
 Mann-Kendall
 statistic = -41
 critical = -68
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Field pH Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-2 (bg)

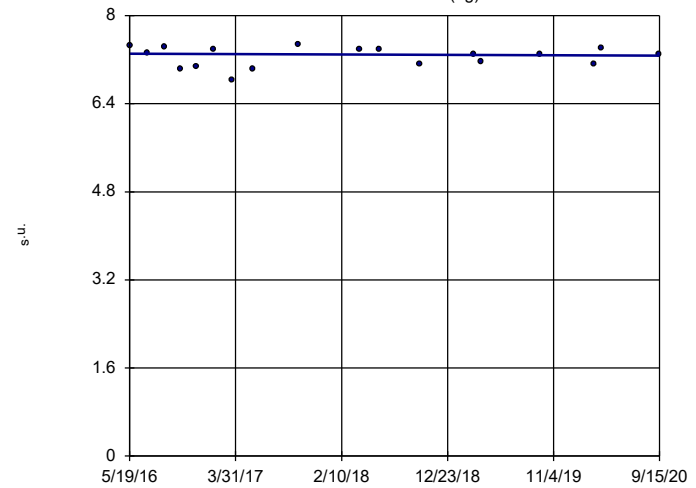


n = 18
 Slope = -0.05778
 units per year.
 Mann-Kendall
 statistic = -45
 critical = -68
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Field pH Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

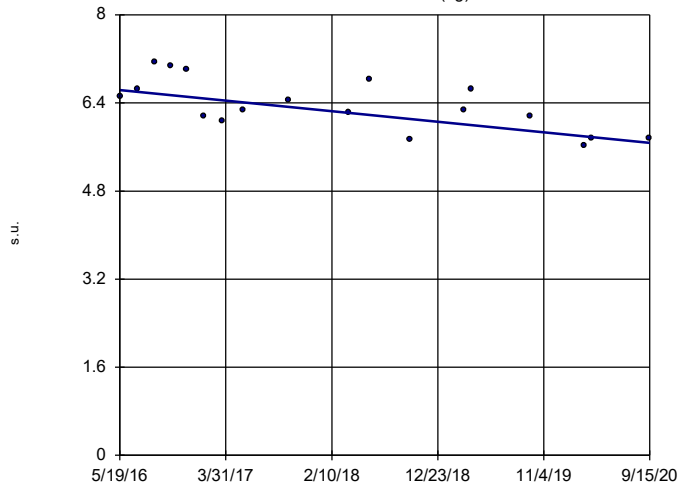


n = 18
 Slope = -0.00841
 units per year.
 Mann-Kendall
 statistic = -13
 critical = -68
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Field pH Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-4 (bg)

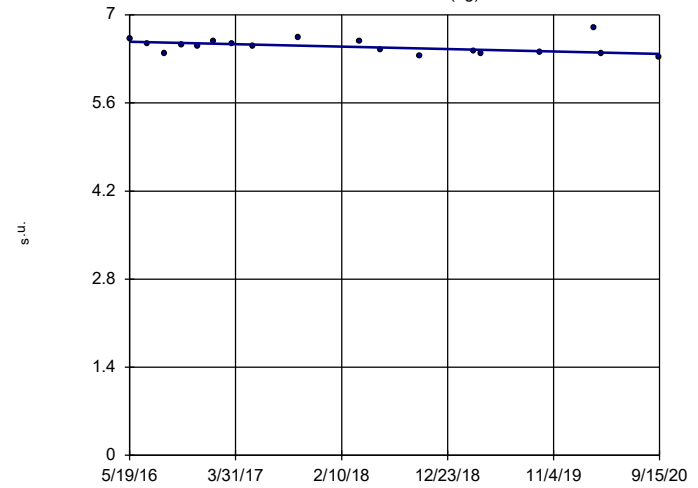


n = 18
 Slope = -0.222
 units per year.
 Mann-Kendall
 statistic = -72
 critical = -68
 Decreasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Field pH Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-5 (bg)

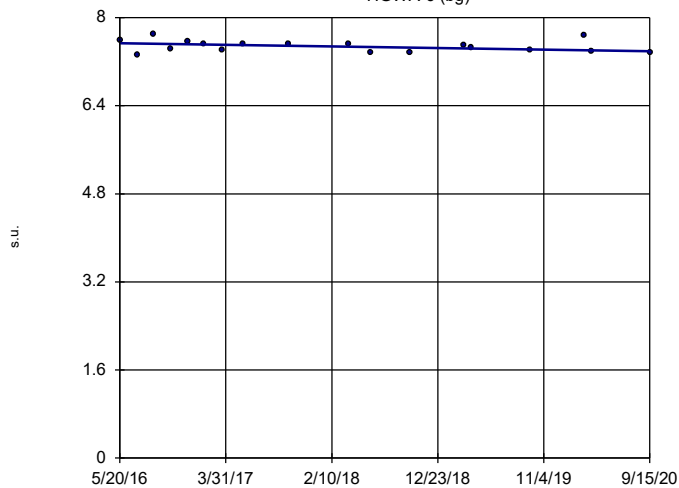


n = 18
 Slope = -0.0438
 units per year.
 Mann-Kendall
 statistic = -52
 critical = -68
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Field pH Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-6 (bg)

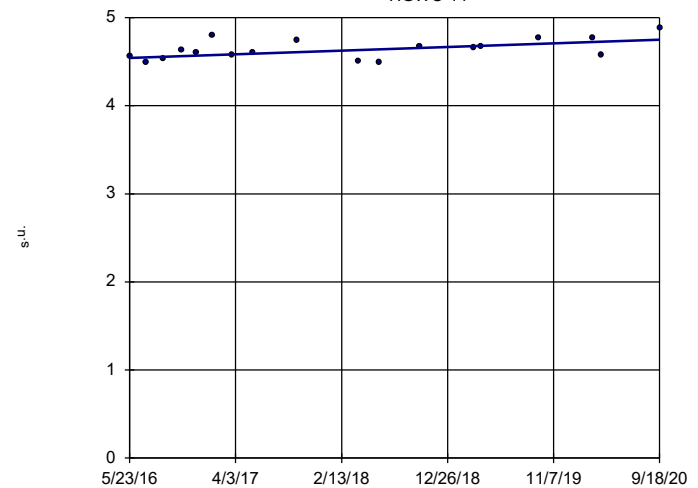


n = 18
 Slope = -0.03342
 units per year.
 Mann-Kendall
 statistic = -41
 critical = -68
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Field pH Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

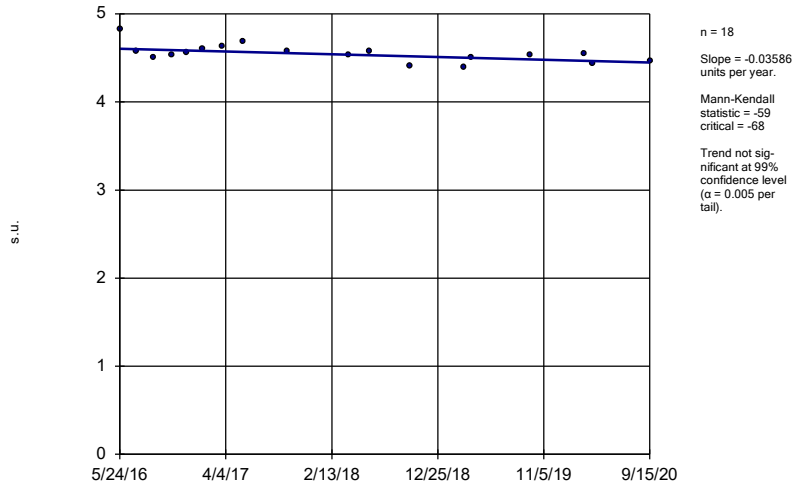
HGWC-14



n = 18
 Slope = 0.04798
 units per year.
 Mann-Kendall
 statistic = 59
 critical = 68
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

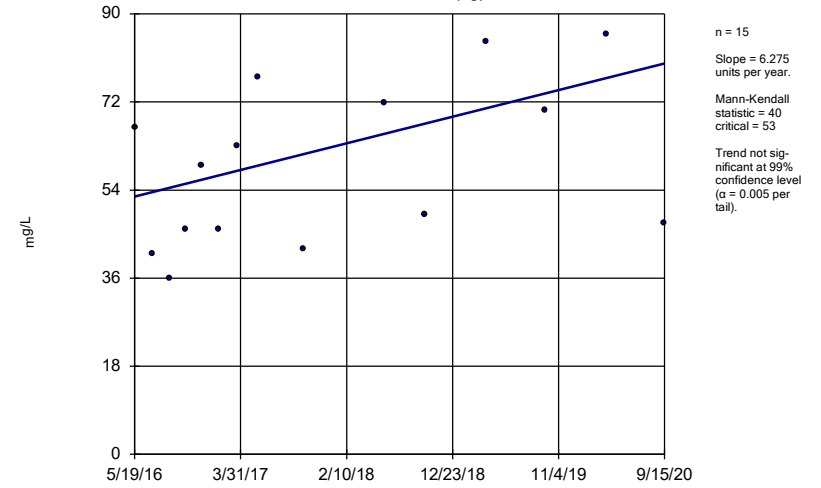
Constituent: Field pH Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-18



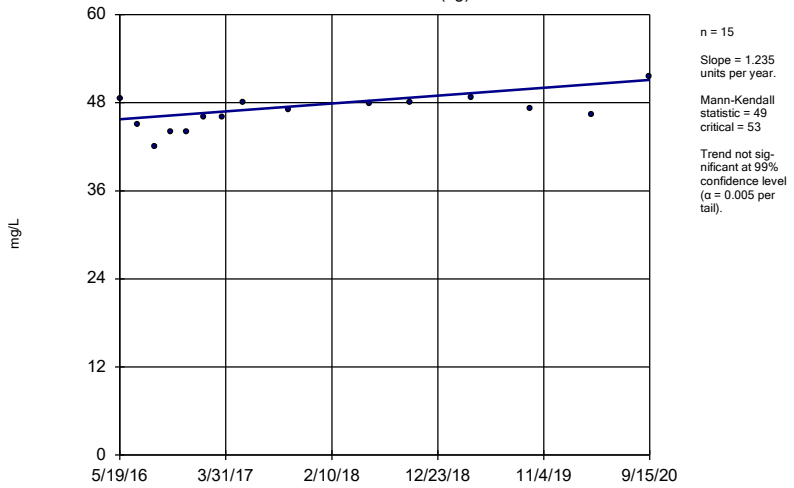
Constituent: Field pH Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWA-1 (bg)



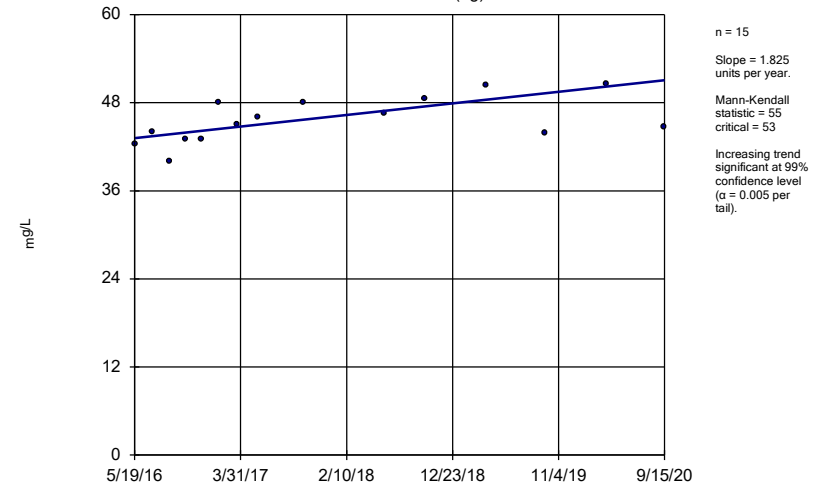
Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWA-2 (bg)



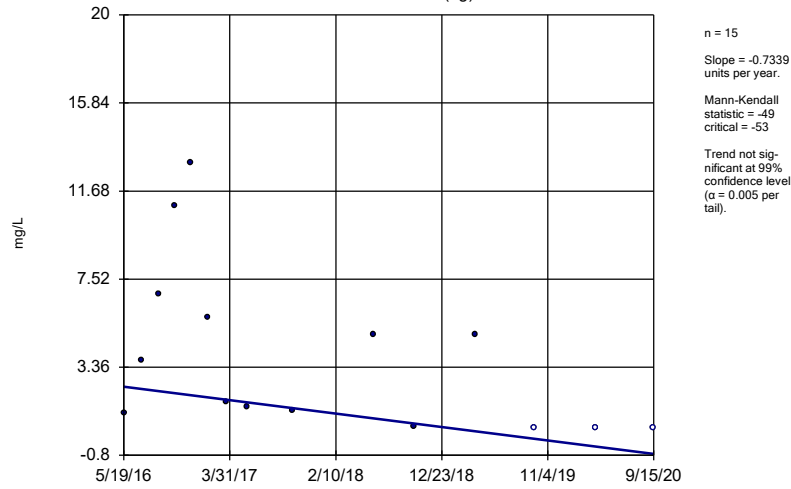
Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWA-3 (bg)



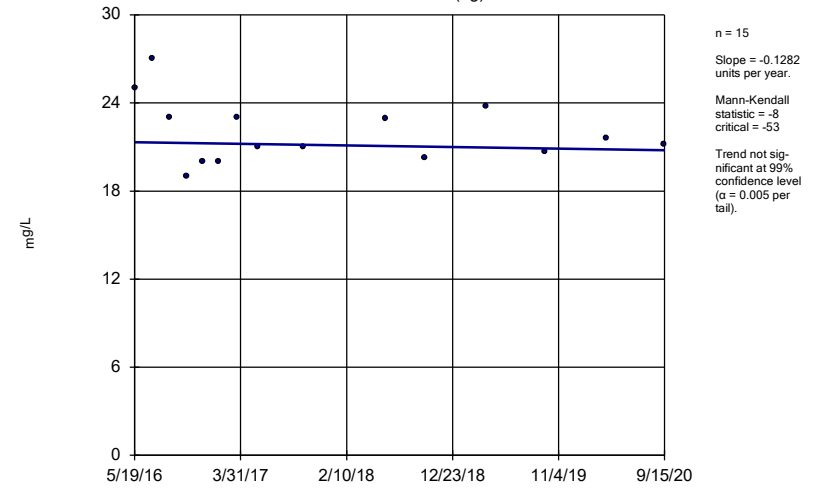
Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
 HGWA-4 (bg)



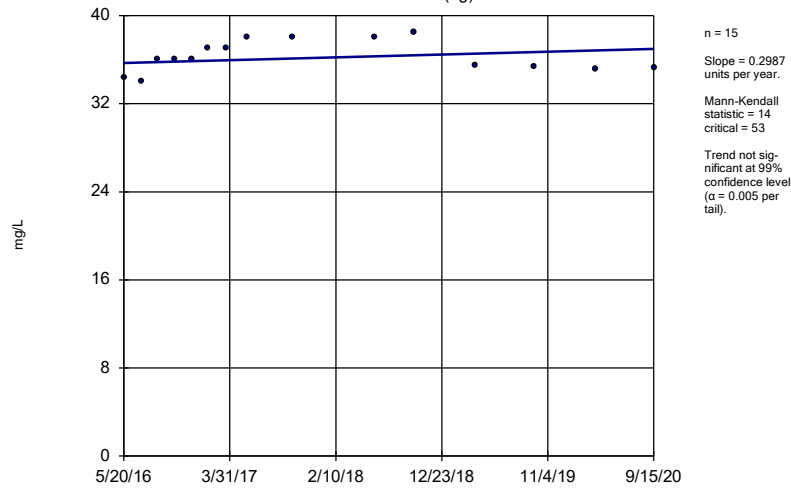
Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
 HGWA-5 (bg)



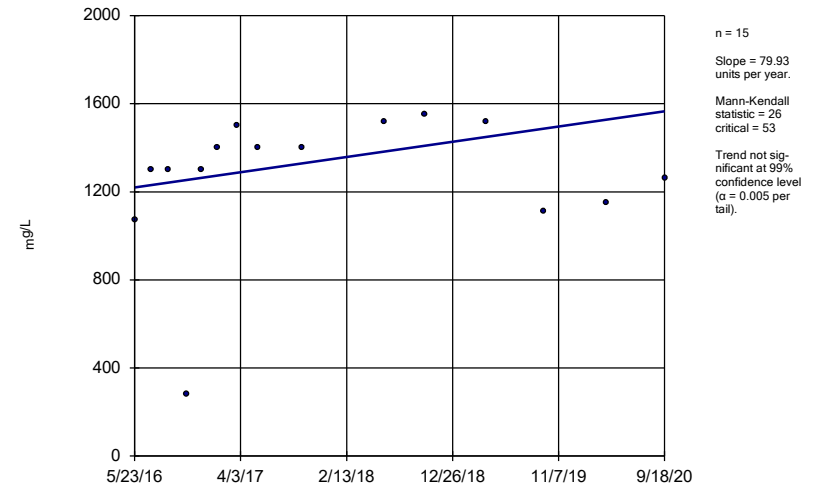
Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
 HGWA-6 (bg)



Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

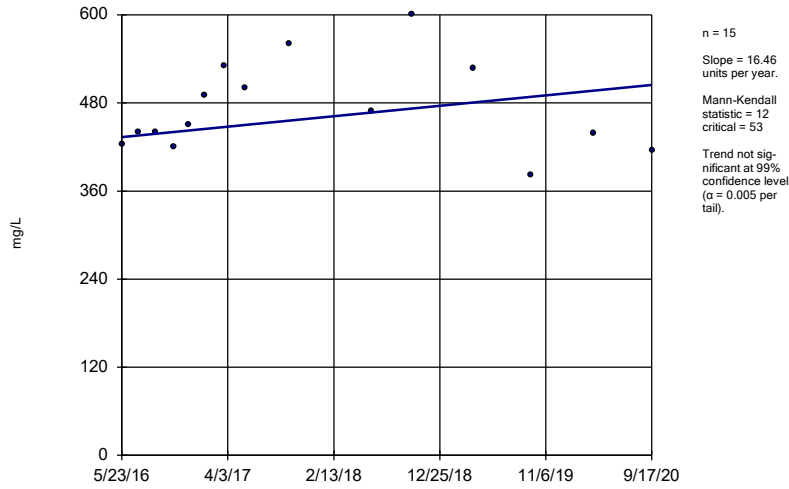
Sen's Slope Estimator
 HGWC-14



Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

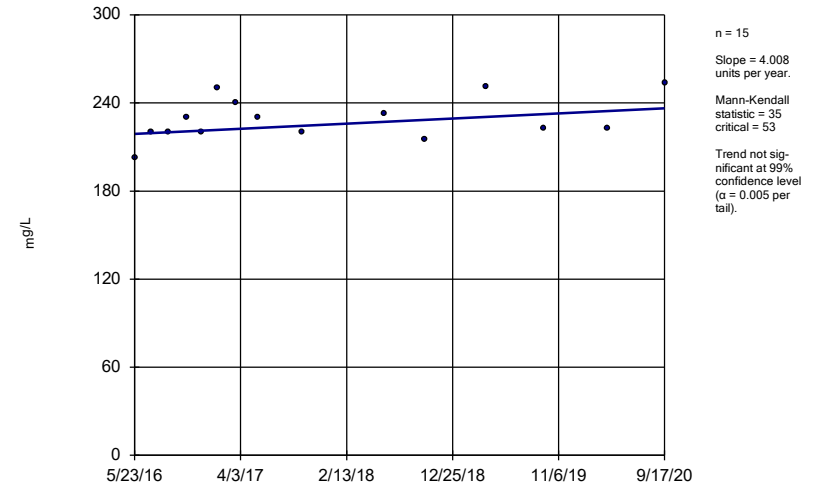
HGWC-15



Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

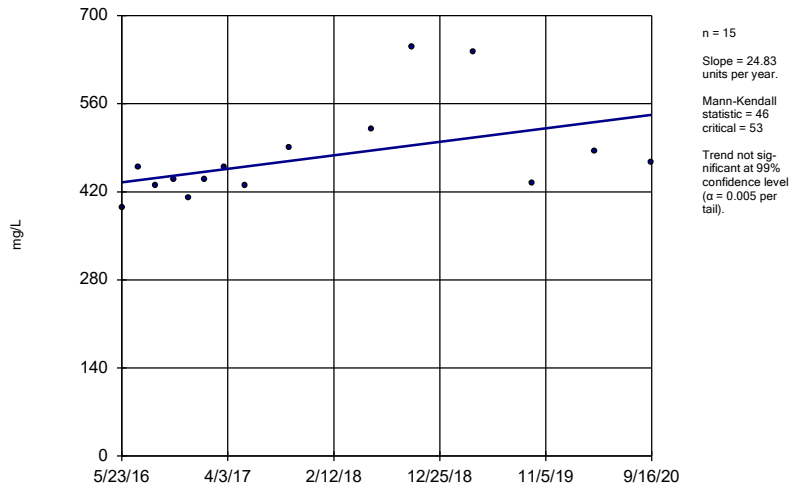
HGWC-16



Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

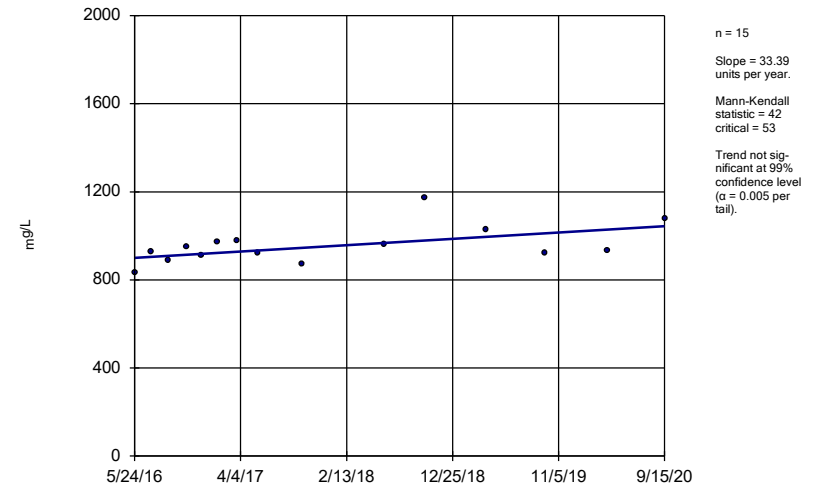
HGWC-17



Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

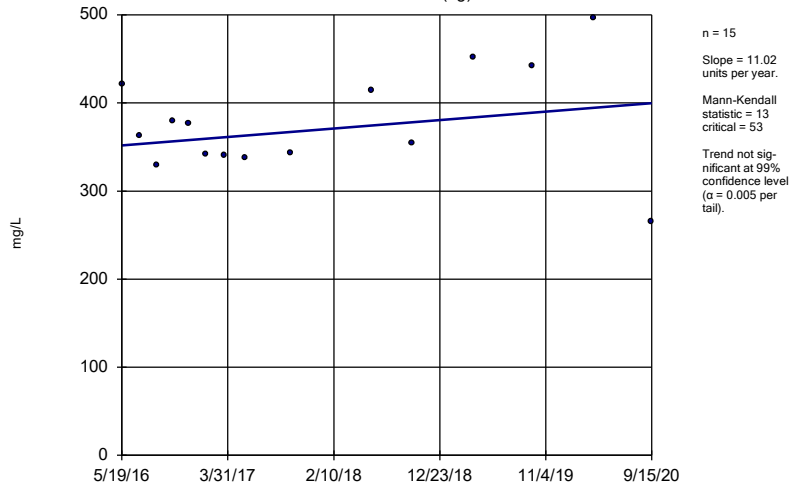
HGWC-18



Constituent: Sulfate Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

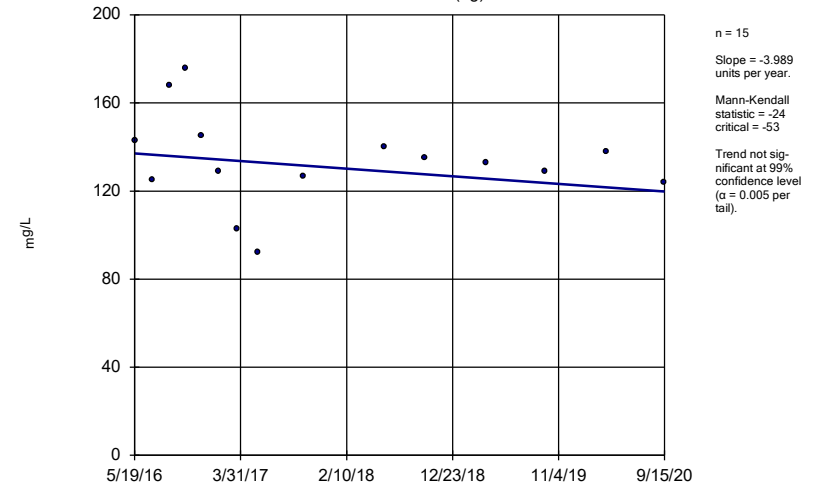
HGWA-1 (bg)



Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

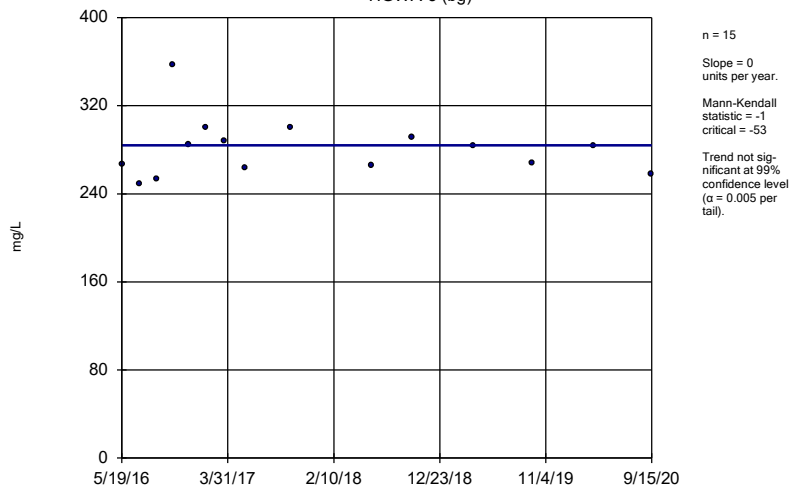
HGWA-2 (bg)



Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

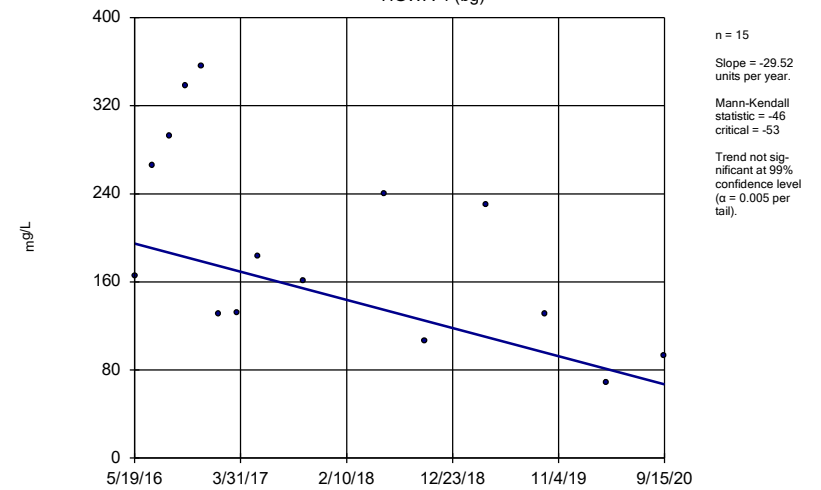
HGWA-3 (bg)



Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

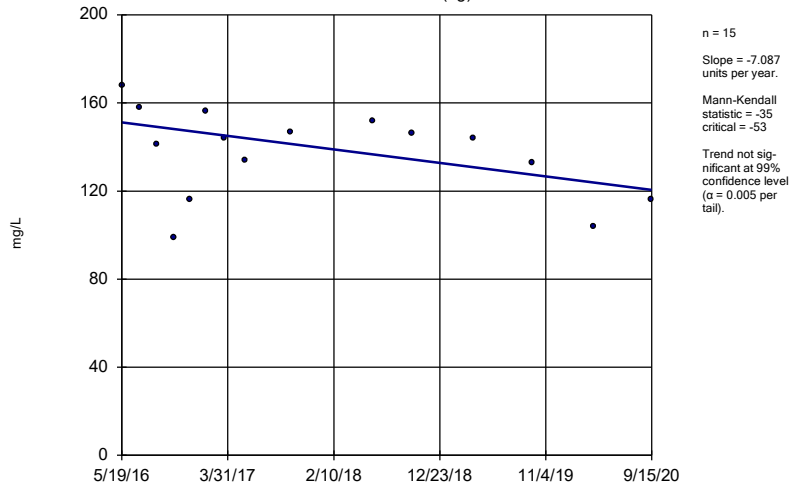
HGWA-4 (bg)



Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-5 (bg)

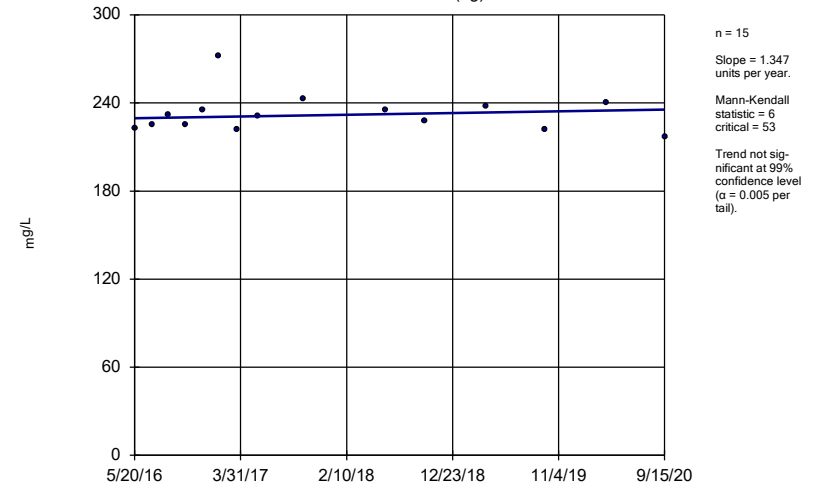


n = 15
 Slope = -7.087
 units per year.
 Mann-Kendall
 statistic = -35
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-6 (bg)

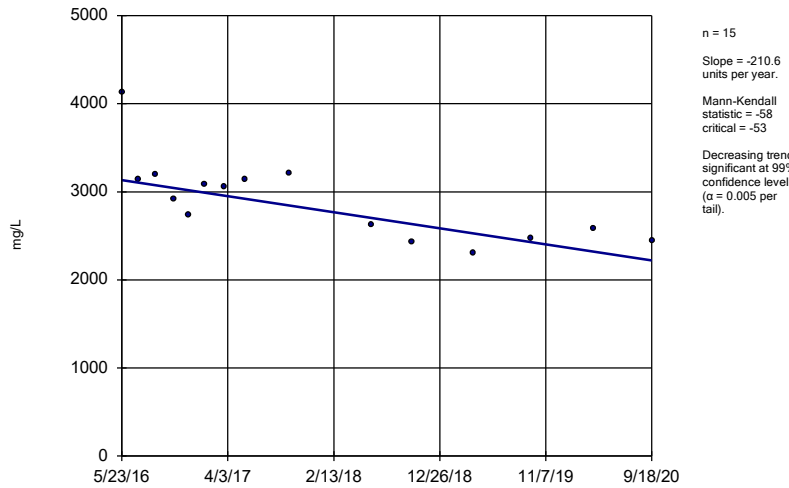


n = 15
 Slope = 1.347
 units per year.
 Mann-Kendall
 statistic = 6
 critical = 53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-14

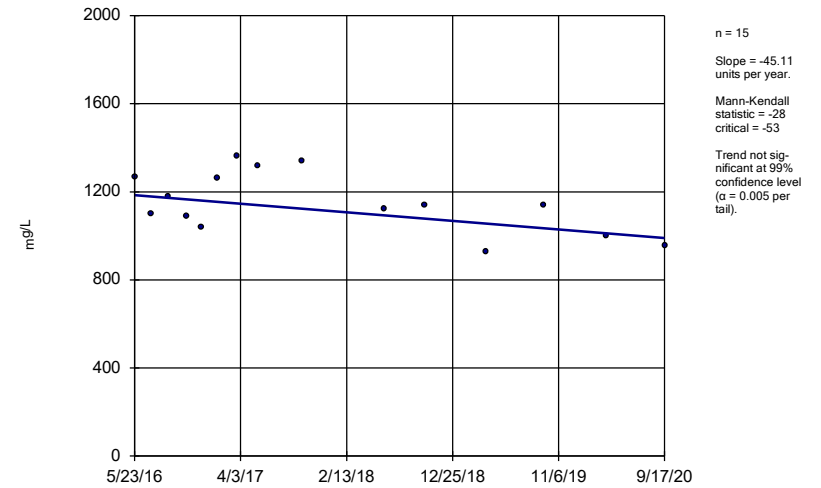


n = 15
 Slope = -210.6
 units per year.
 Mann-Kendall
 statistic = -58
 critical = -53
 Decreasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

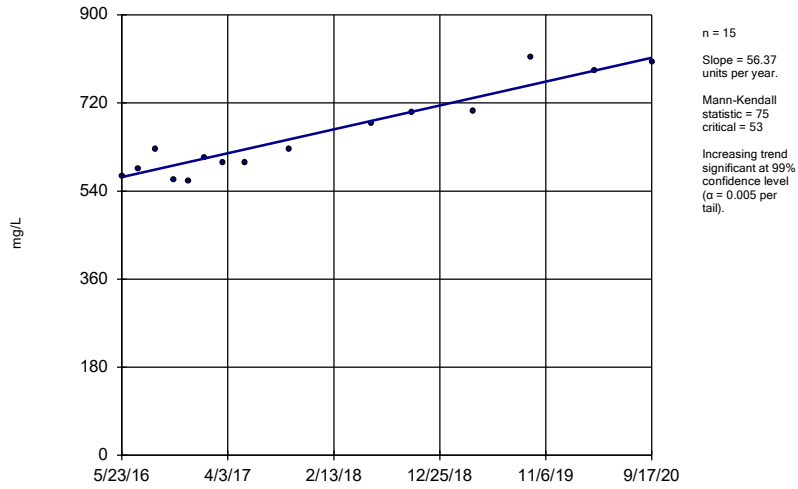
HGWC-15



n = 15
 Slope = -45.11
 units per year.
 Mann-Kendall
 statistic = -28
 critical = -53
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

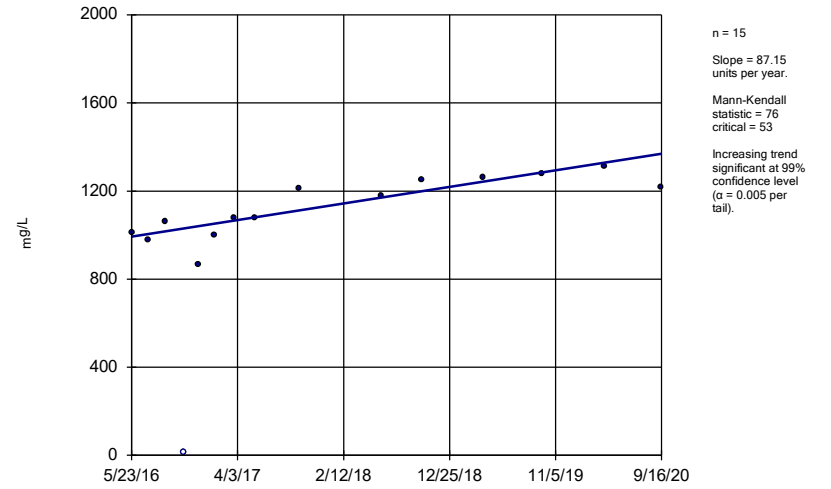
Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-16



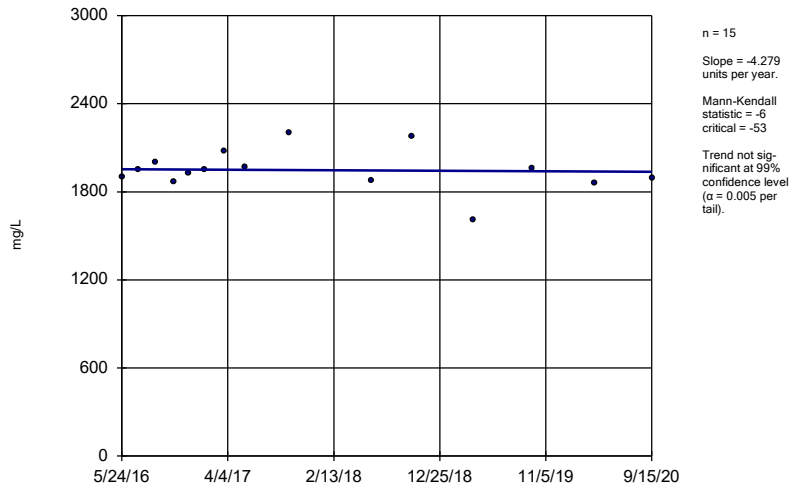
Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-17



Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-18



Constituent: Total Dissolved Solids Analysis Run 11/19/2020 3:31 PM View: Trend Tests - PL Exceedanc
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE F.

Tolerance Limit Summary Table

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 1/7/2021, 11:48 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	n/a	0.005	108	n/a	n/a	80.56	n/a	n/a	0.003928	NP Inter(NDs)
Barium (mg/L)	n/a	0.38	108	n/a	n/a	0	n/a	n/a	0.003928	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	96	n/a	n/a	84.38	n/a	n/a	0.007269	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	108	n/a	n/a	92.59	n/a	n/a	0.003928	NP Inter(NDs)
Chromium (mg/L)	n/a	0.019	96	n/a	n/a	85.42	n/a	n/a	0.007269	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	108	n/a	n/a	69.44	n/a	n/a	0.003928	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	4.36	108	n/a	n/a	0	n/a	n/a	0.003928	NP Inter(n>table)
Fluoride (mg/L)	n/a	0.59	114	n/a	n/a	34.21	n/a	n/a	0.002887	NP Inter(normality)
Lead (mg/L)	n/a	0.005	96	n/a	n/a	73.96	n/a	n/a	0.007269	NP Inter(normality)
Lithium (mg/L)	n/a	0.03	108	n/a	n/a	25	n/a	n/a	0.003928	NP Inter(normality)
Molybdenum (mg/L)	n/a	0.01	96	n/a	n/a	92.71	n/a	n/a	0.007269	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	108	n/a	n/a	99.07	n/a	n/a	0.003928	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	108	n/a	n/a	98.15	n/a	n/a	0.003928	NP Inter(NDs)

FIGURE G.

PLANT HAMMOND AP-2 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.38	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.59	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.01
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

PLANT HAMMOND AP-2 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.38	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		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.59	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

FIGURE H.

State Confidence Interval Summary Table - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:05 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1939	0.166	0.038	Yes 17	0.1799	0.02222	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-33	0.06274	0.04226	0.038	Yes 4	0.0525	0.004509	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-21D	0.04096	0.01647	0.01	Yes 7	0.02871	0.01031	0	None	No	0.01	Param.

State Confidence Interval Summary Table - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:05 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.005911	0.003875	0.01	No 17	0.004893	0.001625	11.76	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 17	0.004196	0.001793	82.35	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 17	0.004218	0.001751	82.35	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.00097	0.01	No 17	0.00401	0.001841	76.47	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-18	0.006952	0.004571	0.01	No 17	0.005761	0.0019	0	None	No	0.01	Param.
Arsenic (mg/L)	MW-21D	0.005	0.00019	0.01	No 7	0.003784	0.002101	71.43	None	No	0.008	NP (normality)
Arsenic (mg/L)	MW-22	0.005	0.00045	0.01	No 6	0.004242	0.001858	83.33	None	No	0.0155	NP (NDs)
Arsenic (mg/L)	MW-23D	0.005	0.00082	0.01	No 6	0.004303	0.001706	83.33	None	No	0.0155	NP (NDs)
Barium (mg/L)	HGWC-14	0.0228	0.019	2	No 17	0.02541	0.01933	5.882	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.02996	0.02094	2	No 17	0.02545	0.007195	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1126	0.09875	2	No 17	0.1057	0.01103	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0225	2	No 17	0.02485	0.002467	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0339	0.028	2	No 17	0.03448	0.01724	5.882	None	No	0.01	NP (normality)
Barium (mg/L)	MW-21D	0.08189	0.04897	2	No 7	0.06543	0.01385	0	None	No	0.01	Param.
Barium (mg/L)	MW-22	0.04182	0.01818	2	No 6	0.03	0.008602	0	None	No	0.01	Param.
Barium (mg/L)	MW-23D	0.0767	0.05403	2	No 6	0.06483	0.008886	0	None	ln(x)	0.01	Param.
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 15	0.0008087	0.0008931	13.33	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.00338	0.002858	0.004	No 15	0.003119	0.0003852	6.667	None	No	0.01	Param.
Beryllium (mg/L)	MW-21D	0.003	0.003	0.004	No 7	0.003	0	100	None	No	0.008	NP (NDs)
Beryllium (mg/L)	MW-22	0.003	0.000047	0.004	No 6	0.002508	0.001206	83.33	None	No	0.0155	NP (NDs)
Beryllium (mg/L)	MW-23D	0.003	0.003	0.004	No 6	0.003	0	100	None	No	0.0155	NP (NDs)
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 17	0.001102	0.001206	41.18	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002362	0.001631	0.005	No 17	0.00203	0.0006666	0	None	x^(1/3)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 17	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 17	0.002357	0.0005894	94.12	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002434	0.002048	0.005	No 17	0.002241	0.0003083	5.882	None	No	0.01	Param.
Cadmium (mg/L)	MW-21D	0.0025	0.0025	0.005	No 7	0.0025	0	100	None	No	0.008	NP (NDs)
Cadmium (mg/L)	MW-22	0.002382	0.0006048	0.005	No 6	0.001493	0.0006468	0	None	No	0.01	Param.
Cadmium (mg/L)	MW-23D	0.0025	0.0006	0.005	No 6	0.002183	0.0007757	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 15	0.008739	0.003329	86.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 15	0.008727	0.003359	86.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 15	0.008214	0.003713	80	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 15	0.009453	0.002117	93.33	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.00063	0.1	No 15	0.008102	0.003929	80	None	No	0.01	NP (NDs)
Chromium (mg/L)	MW-21D	0.01	0.00057	0.1	No 7	0.008653	0.003564	85.71	None	No	0.008	NP (NDs)
Chromium (mg/L)	MW-22	0.01	0.0004	0.1	No 6	0.0084	0.003919	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	MW-23D	0.01	0.00086	0.1	No 6	0.008477	0.003731	83.33	None	No	0.0155	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02792	0.0236	0.038	No 17	0.02498	0.005733	5.882	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.04931	0.03241	0.038	No 17	0.04086	0.01348	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 17	0.00445	0.001553	88.24	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01639	0.01485	0.038	No 17	0.01562	0.001225	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1939	0.166	0.038	Yes 17	0.1799	0.02222	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-21D	0.005	0.00034	0.038	No 7	0.004334	0.001761	85.71	None	No	0.008	NP (NDs)
Cobalt (mg/L)	MW-22	0.04075	0.01992	0.038	No 6	0.03033	0.007581	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-23D	0.001284	0.0009289	0.038	No 6	0.001107	0.0001294	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-33	0.06274	0.04226	0.038	Yes 4	0.0525	0.004509	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.67	1.194	5	No 17	1.432	0.3802	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.8752	0.4315	5	No 17	0.6534	0.3541	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.057	0.5518	5	No 17	0.8044	0.4031	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.078	0.6489	5	No 17	0.8635	0.3425	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.358	1.808	5	No 17	2.083	0.4391	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-21D	1.422	0.4539	5	No 7	0.9056	0.483	0	None	x^(1/3)	0.01	Param.

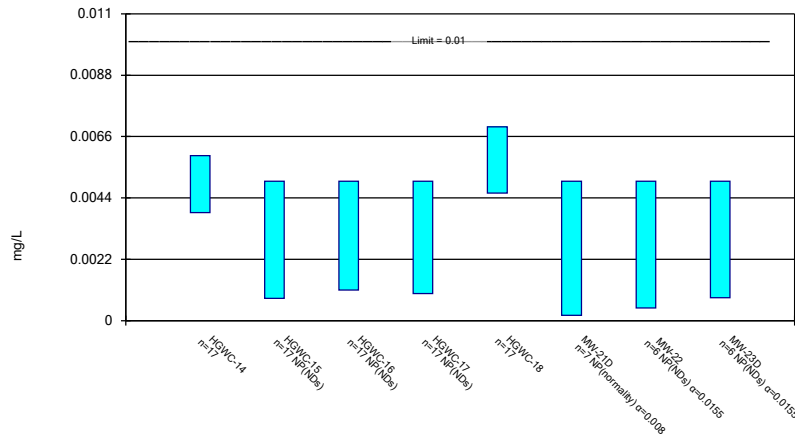
State Confidence Interval Summary Table - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:05 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Combined Radium 226 + 228 (pCi/L)	MW-22	1.51	0.2891	5	No 6	0.8995	0.4443	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-23D	1.293	0.4581	5	No 6	0.8753	0.3038	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.28	0.092	4	No 18	0.1992	0.1654	22.22	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-15	0.22	0.09	4	No 18	0.1533	0.1291	38.89	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-16	0.26	0.059	4	No 18	0.1632	0.1277	50	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-17	0.23	0.07	4	No 18	0.1877	0.227	38.89	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-18	0.6582	0.3974	4	No 18	0.5278	0.2155	5.556	None	No	0.01	Param.
Fluoride (mg/L)	MW-21D	0.1	0.1	4	No 7	0.1	5.6e-10	85.71	None	No	0.008	NP (NDs)
Fluoride (mg/L)	MW-22	0.28	0.1	4	No 6	0.135	0.07204	66.67	None	No	0.0155	NP (normality)
Fluoride (mg/L)	MW-23D	0.16	0.1	4	No 6	0.1167	0.02658	66.67	None	No	0.0155	NP (normality)
Fluoride (mg/L)	MW-33	0.2928	0.06724	4	No 4	0.18	0.04967	0	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0013	0.005	No 15	0.001808	0.0009153	6.667	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.005	No 15	0.003428	0.002311	66.67	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.005	No 15	0.002725	0.002518	53.33	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000077	0.005	No 15	0.003036	0.00249	60	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.005	No 15	0.001629	0.000948	6.667	None	No	0.01	NP (normality)
Lead (mg/L)	MW-21D	0.005	0.000047	0.005	No 7	0.003585	0.002417	71.43	None	No	0.008	NP (normality)
Lead (mg/L)	MW-22	0.005	0.000094	0.005	No 6	0.003366	0.002532	66.67	None	No	0.0155	NP (normality)
Lead (mg/L)	MW-23D	0.005	0.000051	0.005	No 6	0.003368	0.002528	66.67	None	No	0.0155	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.03	No 17	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0016	0.03	No 17	0.01284	0.01329	35.29	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0043	0.0028	0.03	No 17	0.004924	0.006495	5.882	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.03	No 17	0.01808	0.01469	58.82	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01487	0.01242	0.03	No 17	0.01365	0.001953	0	None	No	0.01	Param.
Lithium (mg/L)	MW-21D	0.02655	0.02059	0.03	No 7	0.02357	0.002507	0	None	No	0.01	Param.
Lithium (mg/L)	MW-22	0.001842	0.001025	0.03	No 6	0.001417	0.0003125	0	None	sqrt(x)	0.01	Param.
Lithium (mg/L)	MW-23D	0.002732	0.002001	0.03	No 6	0.002367	0.0002658	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.01	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.01	No 15	0.00938	0.002401	93.33	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.01	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.01	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.01	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	MW-21D	0.04096	0.01647	0.01	Yes 7	0.02871	0.01031	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-22	0.01	0.00013	0.01	No 6	0.008355	0.004029	83.33	None	No	0.0155	NP (NDs)
Molybdenum (mg/L)	MW-23D	0.01	0.0014	0.01	No 6	0.003783	0.003109	16.67	None	No	0.0155	NP (Cohens/xfrm)
Selenium (mg/L)	HGWC-14	0.01374	0.006587	0.05	No 17	0.01017	0.005711	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0041	0.05	No 17	0.008065	0.003666	76.47	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No 17	0.009417	0.002404	94.12	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No 17	0.008458	0.003455	82.35	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03589	0.01809	0.05	No 17	0.02699	0.0142	5.882	None	No	0.01	Param.
Selenium (mg/L)	MW-21D	0.01	0.01	0.05	No 7	0.01	0	100	None	No	0.008	NP (NDs)
Selenium (mg/L)	MW-22	0.01	0.002	0.05	No 6	0.008667	0.003266	83.33	None	No	0.0155	NP (NDs)
Selenium (mg/L)	MW-23D	0.01	0.01	0.05	No 6	0.01	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No 17	0.0002968	0.00002922	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No 17	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No 17	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No 17	0.0006353	0.0004494	58.82	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No 17	0.00051	0.0004231	41.18	None	No	0.01	NP (normality)
Thallium (mg/L)	MW-21D	0.001	0.001	0.002	No 7	0.001	0	100	None	No	0.008	NP (NDs)
Thallium (mg/L)	MW-22	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	MW-23D	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

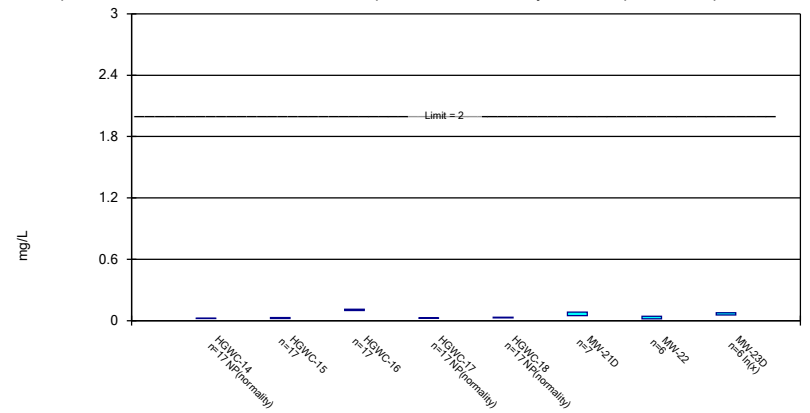
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

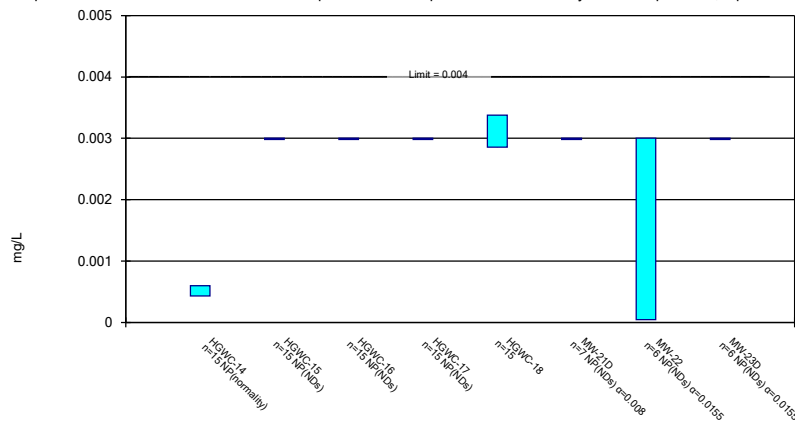
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Constituent: Barium Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

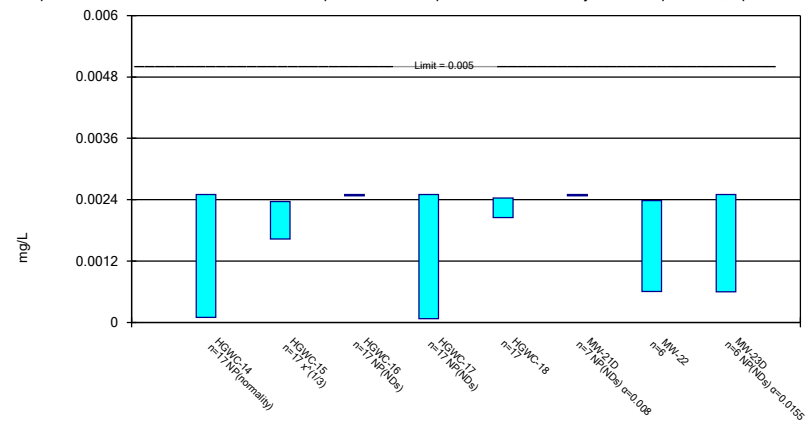
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Constituent: Beryllium Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

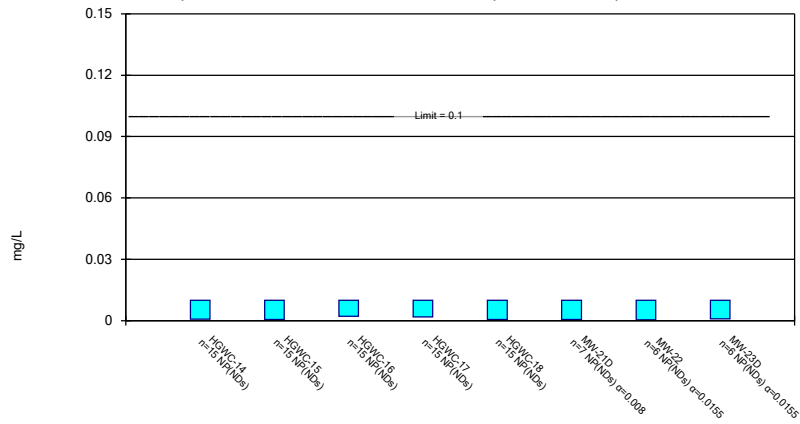
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Constituent: Cadmium Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

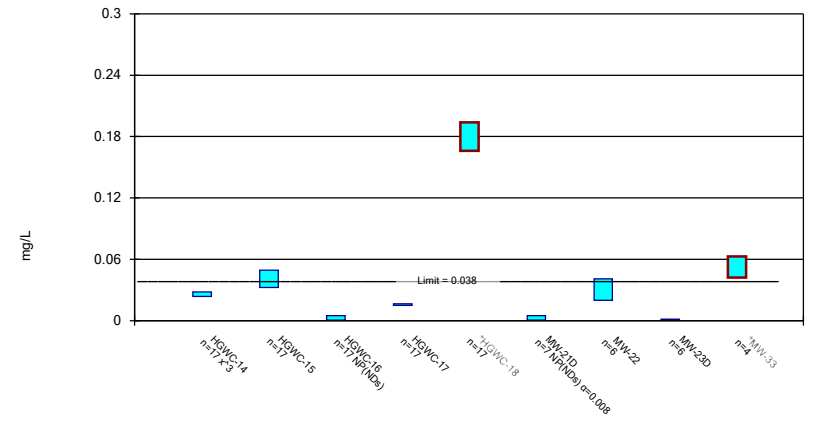
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Constituent: Chromium Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

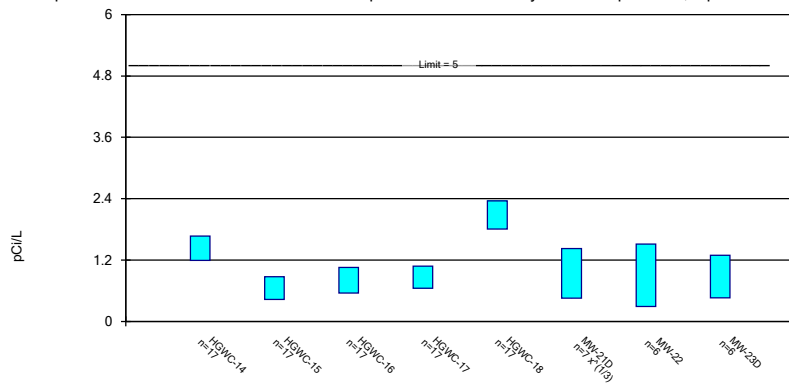
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric Confidence Interval

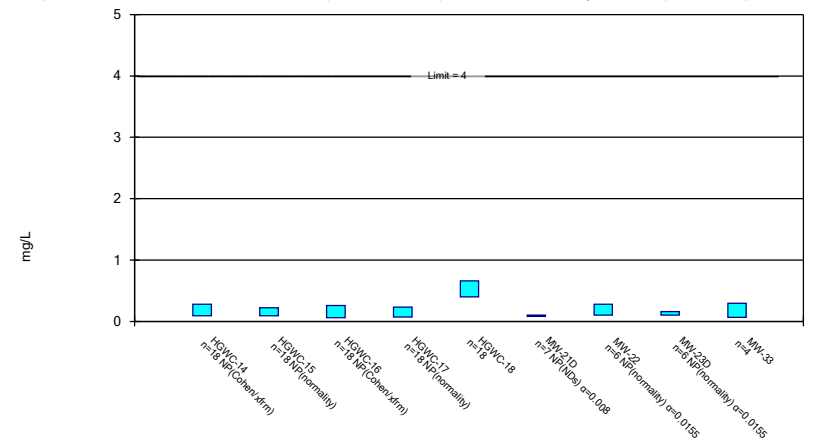
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Constituent: Combined Radium 226 + 228 Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals -
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

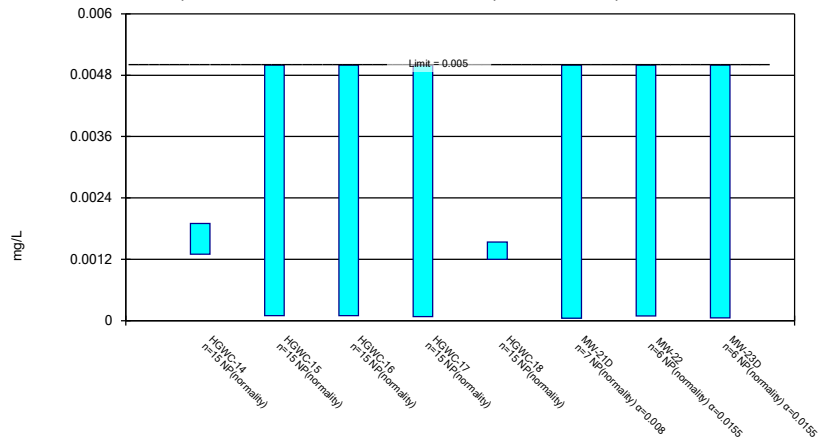
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Constituent: Fluoride Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

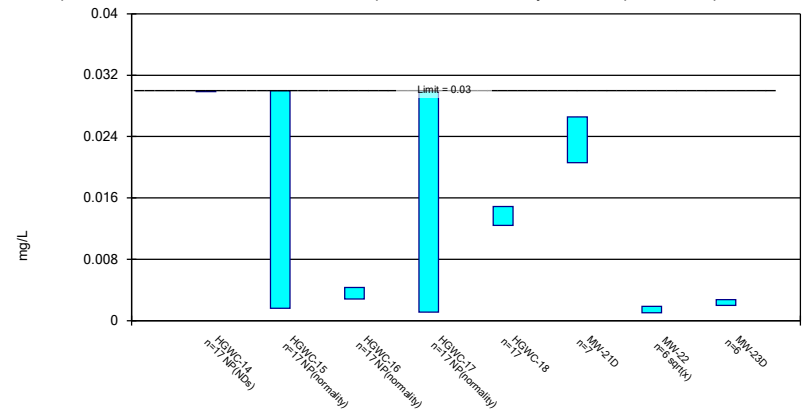
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Constituent: Lead Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

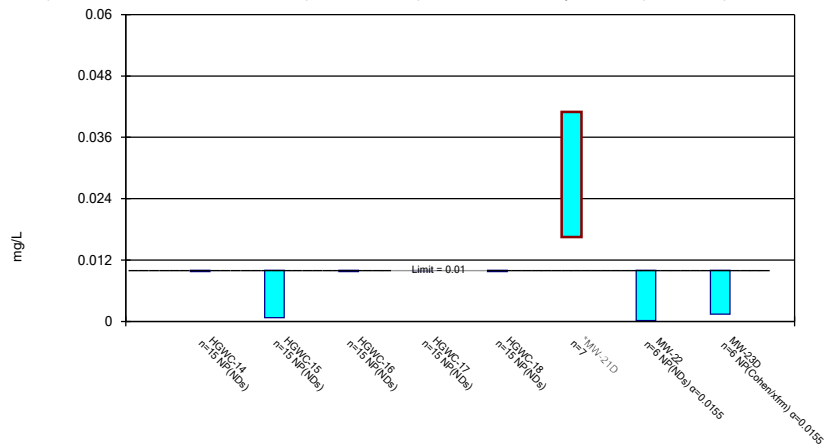
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Constituent: Lithium Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

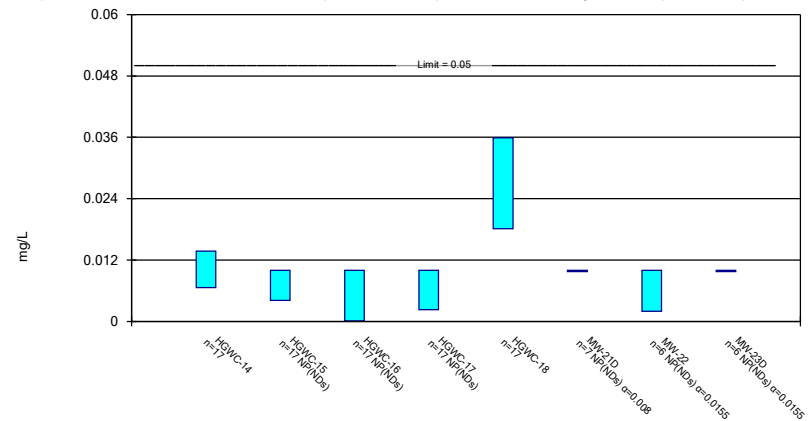
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Constituent: Molybdenum Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

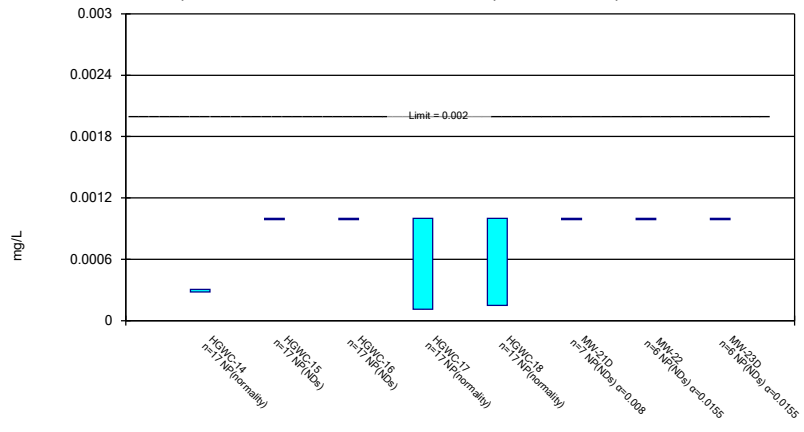
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Thallium Analysis Run 2/10/2021 1:04 PM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE I.

Federal Confidence Interval Summary Table - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:08 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1939	0.166	0.038	Yes 17	0.1799	0.02222	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-33	0.06274	0.04226	0.038	Yes 4	0.0525	0.004509	0	None	No	0.01	Param.

Federal Confidence Interval Summary Table - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:08 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.005911	0.003875	0.01	No 17	0.004893	0.001625	11.76	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 17	0.004196	0.001793	82.35	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 17	0.004218	0.001751	82.35	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.00097	0.01	No 17	0.00401	0.001841	76.47	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-18	0.006952	0.004571	0.01	No 17	0.005761	0.0019	0	None	No	0.01	Param.
Arsenic (mg/L)	MW-21D	0.005	0.00019	0.01	No 7	0.003784	0.002101	71.43	None	No	0.008	NP (normality)
Arsenic (mg/L)	MW-22	0.005	0.00045	0.01	No 6	0.004242	0.001858	83.33	None	No	0.0155	NP (NDs)
Arsenic (mg/L)	MW-23D	0.005	0.00082	0.01	No 6	0.004303	0.001706	83.33	None	No	0.0155	NP (NDs)
Barium (mg/L)	HGWC-14	0.0228	0.019	2	No 17	0.02541	0.01933	5.882	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.02996	0.02094	2	No 17	0.02545	0.007195	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1126	0.09875	2	No 17	0.1057	0.01103	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0225	2	No 17	0.02485	0.002467	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0339	0.028	2	No 17	0.03448	0.01724	5.882	None	No	0.01	NP (normality)
Barium (mg/L)	MW-21D	0.08189	0.04897	2	No 7	0.06543	0.01385	0	None	No	0.01	Param.
Barium (mg/L)	MW-22	0.04182	0.01818	2	No 6	0.03	0.008602	0	None	No	0.01	Param.
Barium (mg/L)	MW-23D	0.0767	0.05403	2	No 6	0.06483	0.008886	0	None	ln(x)	0.01	Param.
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 15	0.0008087	0.0008931	13.33	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 15	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.00338	0.002858	0.004	No 15	0.003119	0.0003852	6.667	None	No	0.01	Param.
Beryllium (mg/L)	MW-21D	0.003	0.003	0.004	No 7	0.003	0	100	None	No	0.008	NP (NDs)
Beryllium (mg/L)	MW-22	0.003	0.000047	0.004	No 6	0.002508	0.001206	83.33	None	No	0.0155	NP (NDs)
Beryllium (mg/L)	MW-23D	0.003	0.003	0.004	No 6	0.003	0	100	None	No	0.0155	NP (NDs)
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 17	0.001102	0.001206	41.18	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002362	0.001631	0.005	No 17	0.00203	0.0006666	0	None	x^(1/3)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 17	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 17	0.002357	0.0005894	94.12	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002434	0.002048	0.005	No 17	0.002241	0.0003083	5.882	None	No	0.01	Param.
Cadmium (mg/L)	MW-21D	0.0025	0.0025	0.005	No 7	0.0025	0	100	None	No	0.008	NP (NDs)
Cadmium (mg/L)	MW-22	0.002382	0.0006048	0.005	No 6	0.001493	0.0006468	0	None	No	0.01	Param.
Cadmium (mg/L)	MW-23D	0.0025	0.0006	0.005	No 6	0.002183	0.0007757	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 15	0.008739	0.003329	86.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 15	0.008727	0.003359	86.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 15	0.008214	0.003713	80	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 15	0.009453	0.002117	93.33	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.00063	0.1	No 15	0.008102	0.003929	80	None	No	0.01	NP (NDs)
Chromium (mg/L)	MW-21D	0.01	0.00057	0.1	No 7	0.008653	0.003564	85.71	None	No	0.008	NP (NDs)
Chromium (mg/L)	MW-22	0.01	0.0004	0.1	No 6	0.0084	0.003919	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	MW-23D	0.01	0.00086	0.1	No 6	0.008477	0.003731	83.33	None	No	0.0155	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02792	0.0236	0.038	No 17	0.02498	0.005733	5.882	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.04931	0.03241	0.038	No 17	0.04086	0.01348	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 17	0.00445	0.001553	88.24	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01639	0.01485	0.038	No 17	0.01562	0.001225	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1939	0.166	0.038	Yes 17	0.1799	0.02222	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-21D	0.005	0.00034	0.038	No 7	0.004334	0.001761	85.71	None	No	0.008	NP (NDs)
Cobalt (mg/L)	MW-22	0.04075	0.01992	0.038	No 6	0.03033	0.007581	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-23D	0.001284	0.0009289	0.038	No 6	0.001107	0.0001294	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-33	0.06274	0.04226	0.038	Yes 4	0.0525	0.004509	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.28	0.092	4	No 18	0.1992	0.1654	22.22	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-15	0.22	0.09	4	No 18	0.1533	0.1291	38.89	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-16	0.26	0.059	4	No 18	0.1632	0.1277	50	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-17	0.23	0.07	4	No 18	0.1877	0.227	38.89	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-18	0.6582	0.3974	4	No 18	0.5278	0.2155	5.556	None	No	0.01	Param.
Fluoride (mg/L)	MW-21D	0.1	0.1	4	No 7	0.1	5.6e-10	85.71	None	No	0.008	NP (NDs)

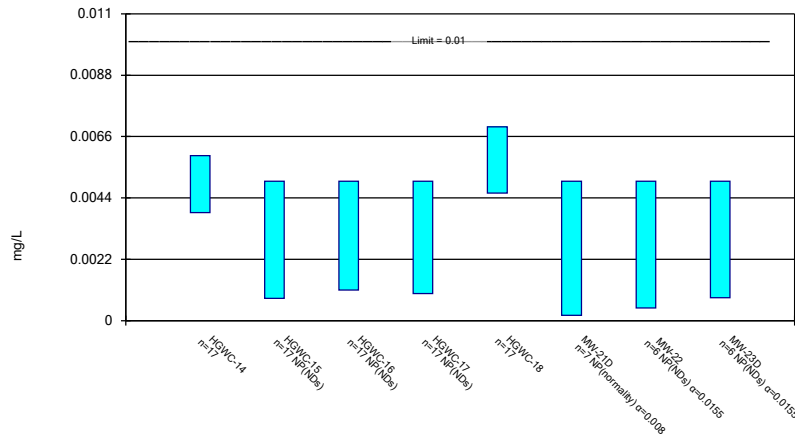
Federal Confidence Interval Summary Table - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 2/10/2021, 1:08 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Fluoride (mg/L)	MW-22	0.28	0.1	4	No 6	0.135	0.07204	66.67	None	No	0.0155	NP (normality)
Fluoride (mg/L)	MW-23D	0.16	0.1	4	No 6	0.1167	0.02658	66.67	None	No	0.0155	NP (normality)
Fluoride (mg/L)	MW-33	0.2928	0.06724	4	No 4	0.18	0.04967	0	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0013	0.015	No 15	0.001808	0.0009153	6.667	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.015	No 15	0.003428	0.002311	66.67	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.015	No 15	0.002725	0.002518	53.33	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000077	0.015	No 15	0.003036	0.00249	60	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.015	No 15	0.001629	0.000948	6.667	None	No	0.01	NP (normality)
Lead (mg/L)	MW-21D	0.005	0.000047	0.015	No 7	0.003585	0.002417	71.43	None	No	0.008	NP (normality)
Lead (mg/L)	MW-22	0.005	0.000094	0.015	No 6	0.003366	0.002532	66.67	None	No	0.0155	NP (normality)
Lead (mg/L)	MW-23D	0.005	0.000051	0.015	No 6	0.003368	0.002528	66.67	None	No	0.0155	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.03	No 17	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0016	0.03	No 17	0.01284	0.01329	35.29	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0043	0.0028	0.03	No 17	0.004924	0.006495	5.882	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.03	No 17	0.01808	0.01469	58.82	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01487	0.01242	0.03	No 17	0.01365	0.001953	0	None	No	0.01	Param.
Lithium (mg/L)	MW-21D	0.02655	0.02059	0.03	No 7	0.02357	0.002507	0	None	No	0.01	Param.
Lithium (mg/L)	MW-22	0.001842	0.001025	0.03	No 6	0.001417	0.0003125	0	None	sqrt(x)	0.01	Param.
Lithium (mg/L)	MW-23D	0.002732	0.002001	0.03	No 6	0.002367	0.0002658	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.1	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.1	No 15	0.00938	0.002401	93.33	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.1	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.1	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.1	No 15	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	MW-21D	0.04096	0.01647	0.1	No 7	0.02871	0.01031	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-22	0.01	0.00013	0.1	No 6	0.008355	0.004029	83.33	None	No	0.0155	NP (NDs)
Molybdenum (mg/L)	MW-23D	0.01	0.0014	0.1	No 6	0.003783	0.003109	16.67	None	No	0.0155	NP (Cohens/xfrm)
Selenium (mg/L)	HGWC-14	0.01374	0.006587	0.05	No 17	0.01017	0.005711	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0041	0.05	No 17	0.008065	0.003666	76.47	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No 17	0.009417	0.002404	94.12	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No 17	0.008458	0.003455	82.35	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03589	0.01809	0.05	No 17	0.02699	0.0142	5.882	None	No	0.01	Param.
Selenium (mg/L)	MW-21D	0.01	0.01	0.05	No 7	0.01	0	100	None	No	0.008	NP (NDs)
Selenium (mg/L)	MW-22	0.01	0.002	0.05	No 6	0.008667	0.003266	83.33	None	No	0.0155	NP (NDs)
Selenium (mg/L)	MW-23D	0.01	0.01	0.05	No 6	0.01	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No 17	0.0002968	0.00002922	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No 17	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No 17	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No 17	0.0006353	0.0004494	58.82	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No 17	0.00051	0.0004231	41.18	None	No	0.01	NP (normality)
Thallium (mg/L)	MW-21D	0.001	0.001	0.002	No 7	0.001	0	100	None	No	0.008	NP (NDs)
Thallium (mg/L)	MW-22	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	MW-23D	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

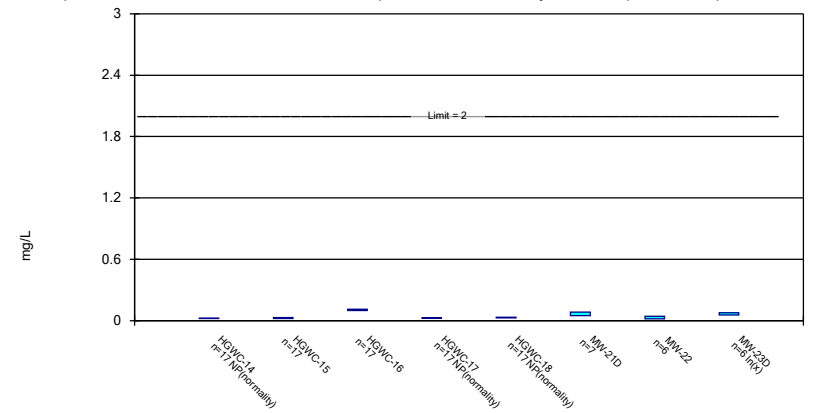
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

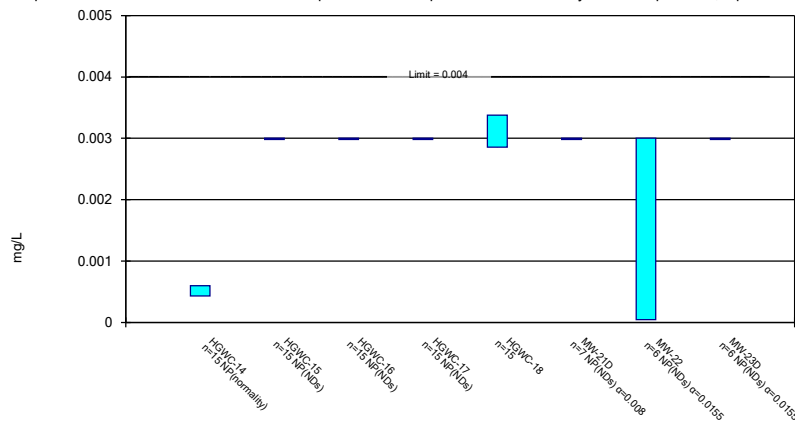
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Constituent: Barium Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

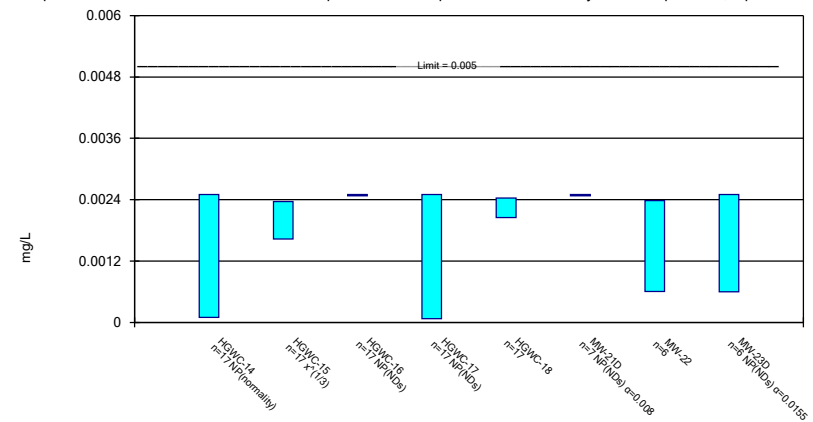
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Constituent: Beryllium Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

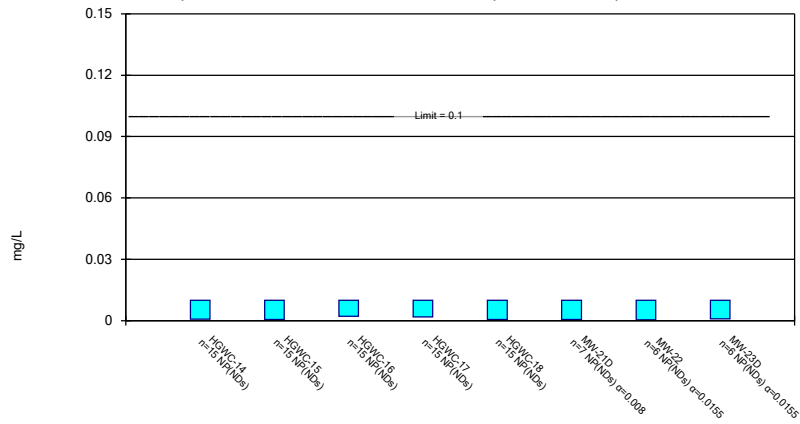
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Constituent: Cadmium Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

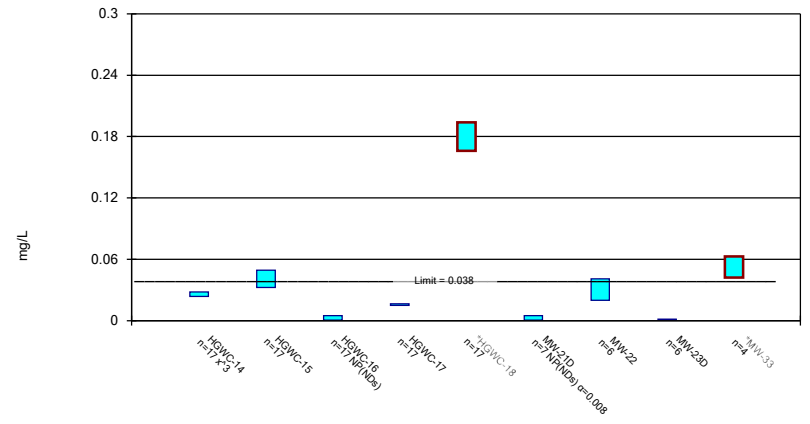
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Chromium Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

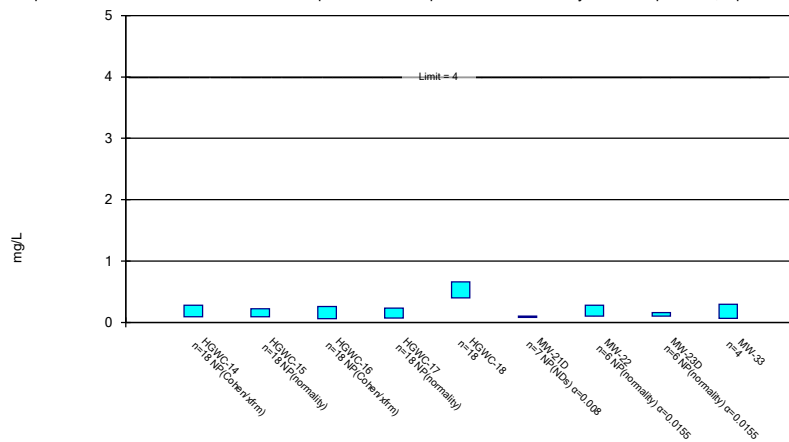
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

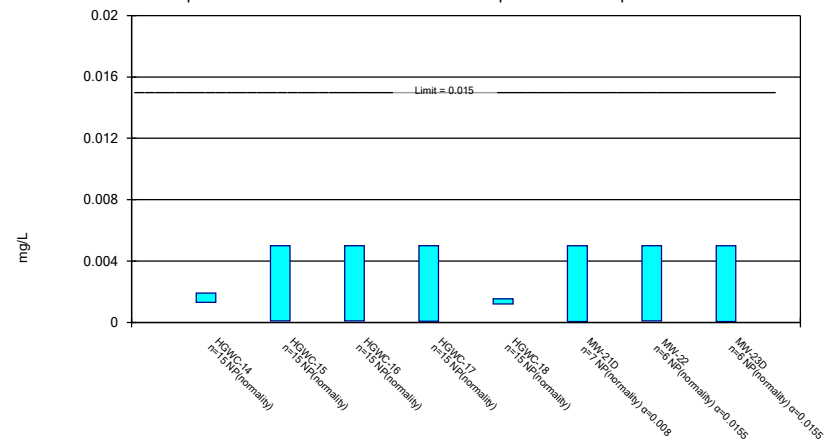
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

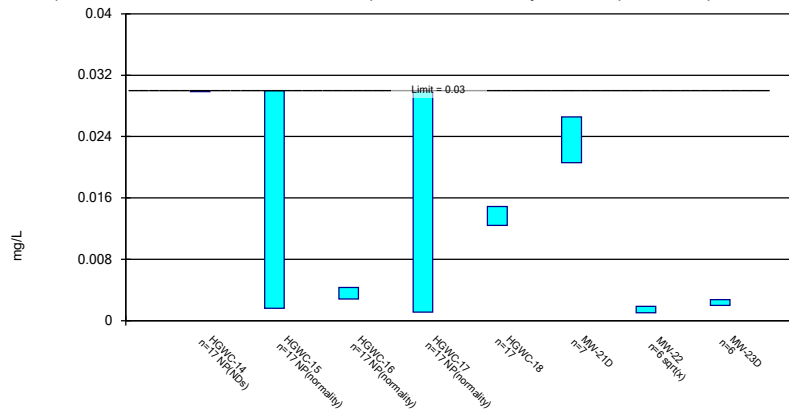
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Lead Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

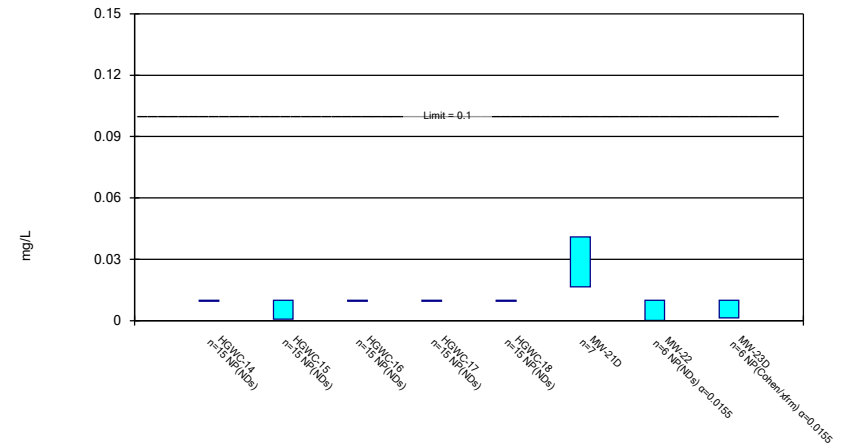
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

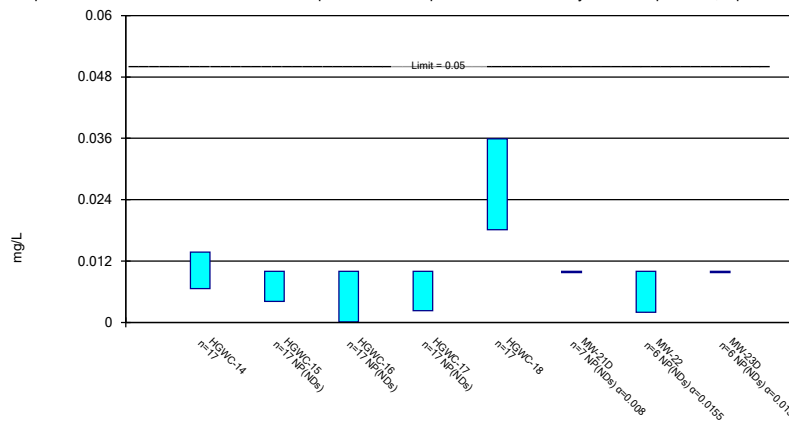
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

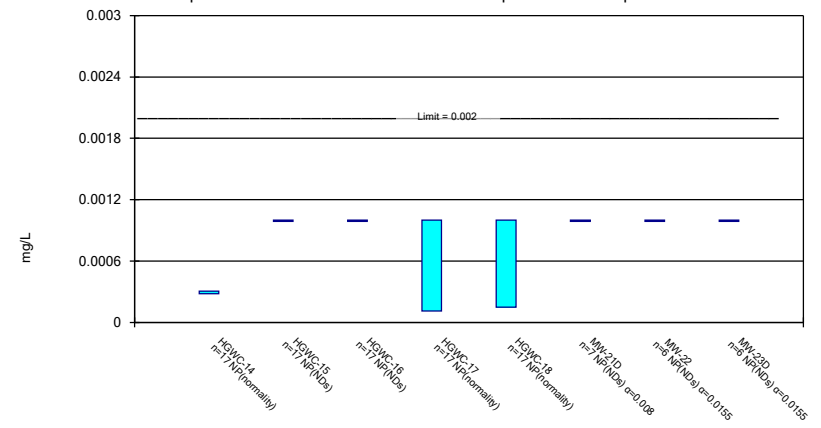
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Thallium Analysis Run 2/10/2021 1:07 PM View: Confidence Intervals - Federal Plant Hammond Client: Southern Company Data: Hammond AP-2