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SEMI-ANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT

PLANT HAMMOND ASH POND 2 (AP-2)

Prepared by

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SEMI-ANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT

GEORGIA POWER COMPANY - PLANT HAMMOND

ASH POND 2 (AP-2)

This *Semi-Annual Remedy Selection and Design Progress Report, 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).

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ACM	Assessment of Corrective Measures
AP	ash pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
CSM	conceptual site model
GA EPD	Georgia Environmental Protection Division
Geosyntec	Geosyntec Consultants, Inc.
GPC	Georgia Power Company
GWPS	Groundwater Protection Standard
MNA	monitored natural attenuation
PRB	permeable reactive barriers
SSI	statistically significant increase
SSL	statistically significant level
US EPA	United States Environmental Protection Agency

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (US EPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015) (CCR Rule), Geosyntec Consultants, Inc. (Geosyntec) has prepared this *Semi-Annual Remedy Selection and Design Progress Report* (Semi-Annual Remedy Selection Progress Report) for Georgia Power Company (GPC) Plant Hammond Ash Pond 2 (AP-2 or Site). Specifically, this Semi-Annual Progress Report has been prepared pursuant to 40 CFR § 257.97(a) and the Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4-.10(6)(a). This Semi-Annual Remedy Selection Progress Report was prepared to document activities conducted in the third and fourth quarters of 2019 (prior semi-annual period) in support of the previously submitted *Assessment of Corrective Measures Report – Plant Hammond Ash Pond 2 (AP-2)* (Geosyntec, 2019b) (ACM Report). As required by the rules, this Semi-Annual Remedy Selection Progress Report describes the progress made in selecting and designing a remedy.

On June 12, 2019, Geosyntec completed, on behalf of GPC, the ACM Report to evaluate potential corrective measures to address statistically significant levels (SSLs) of cobalt identified in groundwater at AP-2 (Geosyntec, 2019b). GPC placed the ACM in the Site's operating record and posted to the Site's CCR Rule Compliance website. Pursuant to 40 CFR § 257.97, GPC is evaluating the potential corrective measures presented in the ACM in order to identify an appropriate remedy, or combination of remedies, as soon as feasible.

As discussed in the ACM Report, the following corrective measures are potentially feasible for use at AP-2:

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

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**).

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 produces electricity.

AP-2 is a 21-acre surface impoundment located at Plant Hammond. AP-2 was used as a dewatering facility for fly ash and bottom ash. To support operations, dewatered ash is excavated and transported to the nearby Huffaker Road facility, a permitted solid waste disposal location owned and operated by GPC. GPC will close AP-2 through removal of the CCR material from the CCR unit; closure activities will be conducted in accordance with 40 CFR § 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, published in 2016 to GPC's CCR Rule Compliance website.

2.0 SUMMARY OF WORK COMPLETED

2.1 Nature and Extent Delineation

CCR compliance groundwater monitoring-related activities have been performed for AP-2 since May 2016 pursuant to detection monitoring and assessment monitoring programs required by 40 CFR § 257.94 and 40 CFR § 257.95, respectively. GPC initiated the assessment monitoring program in January 2018 after identifying statistically significant increases (SSIs) of Appendix III parameter groundwater concentrations over background concentrations. Pursuant to 40 CFR § 257.95, samples were collected from the compliance monitoring well network, depicted on **Figure 2**, during 2018 and analyzed for Appendix IV parameters. SSLs of cobalt were identified within the 2018 data for the following wells:

- Cobalt: HGWC-15 and HGWC-18

The cobalt concentrations reported for wells HGWC-15 and HGWC-18 in 2018 exceeded site-specific groundwater protection standards (GWPS) derived from cobalt concentrations reported for background wells located upgradient of AP-2. The cobalt GWPS of 0.029 mg/L was statistically calculated pursuant to US EPA rule 40 CFR § 257.95(h) and GA EPD CCR Rule 391-3-4-.10(6)(a). For each monitoring event, statistical tests are conducted that assess and incorporate changes in background cobalt concentrations into the GWPS derivation. Details of these sampling events and statistical analyses are provided in the following report published to GPC's website and submitted to GA EPD in 2019: *2018 Annual Groundwater Monitoring and Corrective Action Report – Plant Hammond Ash Ponds 1 and 2* (Geosyntec, 2019a).

Pursuant to 40 CFR § 257.96, groundwater in the vicinity of AP-2 continues to be monitored during the remedy selection phase in accordance with the established assessment monitoring program. As part of the assessment program, three additional groundwater monitoring wells were installed in 2018 to provide additional data to characterize flow conditions downgradient of AP-2 and to horizontally and vertically delineate SSLs of cobalt from the two target wells previously listed. Well MW-22 was installed for horizontal delineation and wells MW-21D and MW-23D were installed for vertical delineation. The locations of these wells are shown on **Figure 2**. Supporting details and documents (e.g., boring logs, well construction table) are provided in the ACM Report.

Based on the Appendix IV groundwater data generated from the second semi-annual assessment monitoring event conducted September 2019, the background cobalt concentrations increased which resulted in a recalculation of the GWPS; the site-specific cobalt GWPS is 0.038 mg/L for the September 2019 data set. Also, the cobalt concentration in well HGWC-15 decreased relative to the results from previous assessment monitoring events. When these two factors are accounted for statistically, a SSL of cobalt in HGWC-15 is not reported. The September 2019 cobalt results for horizontal and vertical delineation wells MW-22 and MW-23D down gradient of HGW-15 are also below the site-specific GWPS, indicating groundwater cobalt concentrations in excess of the GWPS are contained within the property boundary in this area of AP-2. The September 2019 data are currently being finalized and will be published in the *2019 Annual Groundwater Monitoring and Corrective Action Report* (pending submission to GA EPD on January 31, 2020).

The September 2019 data indicates a continued SSL of cobalt in well HGWC-18. However, based on available groundwater and aquifer solid data, elevated cobalt groundwater concentrations reported in this well are believed to originate from the dissolution of naturally occurring cobalt under slightly acidic groundwater conditions. An Alternate Source Demonstration (ASD) is being finalized that will outline multiple lines of evidence to support that cobalt is naturally occurring in the vicinity of HGWC-18. The ASD will be provided in the 2019 annual groundwater monitoring report.

2.2 Summary of Corrective Measures

The closure of AP-2 by removal of the CCR material is a source control measure that reduces the potential for migration of CCR constituents to groundwater. The corrective measures proposed in the ACM are being evaluated to address SSLs in groundwater at and downgradient of the compliance boundary. Each individual corrective measure is evaluated relative to criteria specified in 40 CFR § 257.96(c) and 40 CFR § 257.97(b). A comparative screening of the corrective measures is provided in **Table 1**; the following provides a brief description of each corrective measure being screened.

- **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.*

- **Hydraulic Containment (Pump and Treat):** T*he use of groundwater extraction system(s) to induce a hydraulic gradient for hydraulic capture or control the*

migration of impacted groundwater. Extracted water may require subsequent above-ground treatment before permitted discharge or reuse.

- **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.*

- **Permeable Reactive Barrier (PRB):** *PRB technology typically involves the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater passes through.*

- **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. Groundwater extraction from upgradient of the barrier is required to avoid groundwater mounding behind the barrier.*

2.3 Field Investigation and Data Collection

Additional data, data analysis, and site-specific evaluation are necessary to refine the conceptual site model (CSM) and to further evaluate the feasibility of each proposed corrective measure. This investigation may occur in different phases as the understanding of site conditions expands. When feasible, data needed to refine the CSM will be collected concurrent with the routine assessment monitoring events. However, supplementary field investigations may be required to complete the data gathering efforts during the remedy selection phase.

Table 2 presents a summary of data collection activities completed during the second 2019 semi-annual reporting period. The applicability and rationale for specific actions and/or analysis of specific parameters are also provided on Table 2.

Field efforts completed at AP-2 during the reporting period in support of remedy selection included collecting supplementary groundwater samples to evaluate:

- Attenuation mechanisms and rates and aquifer capacity for attenuation;

- Amount and distribution of select metal hydroxides or electron donors that may affect geochemical mechanisms; and

- Groundwater parameters specific to the existing National Pollutant Discharge Elimination System (NPDES) permitted discharge limits and capabilities of on-site low volume wastewater treatment plant.

The groundwater samples discussed above were collected during the second semi-annual assessment monitoring event conducted in September 2019. During the event, a site-wide round of groundwater level data were recorded from the AP-2 well network depicted on **Figure 2**. The groundwater level data were used to generate the potentiometric surface map provided on **Figure 3**.

The ACM related analytical results from the September 2019 event are summarized in **Tables 3a** and **3b**. The tables present parameters needed to evaluate in-situ conditions that may affect the performance and feasibility of the corrective measures. As previously mentioned, the Appendix III and IV groundwater data collected during the September 2019 event are not presented herein, but instead will be provided in the 2019 annual groundwater monitoring report in January.

The laboratory reports associated with the data presented on Tables 3a and 3b are included in **Appendix A**.

3.0 PLANNED ACTIVITIES & ANTICIPATED SCHEDULE

During the pond closure, temporary changes in site conditions may occur that must be considered as part of remedy selection. GPC proactively initiated adaptive site management, as outlined in the ACM Report (Geosyntec, 2019b), 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, GPC will continue its data collection efforts as necessary in support of efforts to refine the CSM and to further evaluate the feasibility of each corrective measure proposed in the ACM Report. At this time, all corrective measures outlined in Table 1 are being retained. 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 40 CFR § 257.98.

Supplementary data collection and evaluation activities proposed to be completed during the next semi-annual reporting period are presented on **Table 4**. GPC will continue to prepare semi-annual progress reports to document AP-2 groundwater conditions, results associated with additional data gathering, and the progress in selecting and designing the remedy in accordance with 40 CFR § 257.97(a). GPC will include future semi-annual ACM progress reports in routine groundwater monitoring and corrective action reports. To this, any remedy selection evaluation data collected between submission of this December 2019 report and the submission of the 2019 annual groundwater monitoring report in January 2020 will be presented as an addendum to this current Semi-Annual Remedy Selection Report. The addendum will be included with the 2019 annual groundwater monitoring report. Record keeping, notifications, and publicly accessible internet site requirements for the semi-annual ACM progress reports will be provided in accordance with 40 CFR § 257.105(h)(12), 257.106(h)(9), and 257.107(h)(9), respectively.

4.0 REFERENCES

Geosyntec Consultants. 2019a. *2018 Annual Groundwater Monitoring and Corrective Action Report - Plant Hammond Ash Ponds 1 & 2 (AP-2 and AP-2).* January 2019.

Geosyntec Consultants, 2019b. *Assessment of Corrective Measures Report – Plant Hammond Ash Pond 2 (AP-2)*. June 2019.

U.S. 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.

TABLES

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

	Regulatory Citation for Criteria:	40 CFR 257.96(C)(1)	
Corrective Measure	**Description**	**Performance**	**Reliability**
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 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 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 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.	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 in groundwater.
Hydraulic Containment ("Pump and Treat")	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.	Pump and treat (P&T) is effective at providing hydraulic control, 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.
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 cobalt (Co) 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, the main attenuation processes include sorption to iron and manganese oxides and formation of sparingly soluble sulfide minerals.	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. Attenuation processes for Co are already occurring at the site as evidenced by data from the delineation wells. 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 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 in combination with a second technology.
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. 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 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 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.
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, which is 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 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.

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

	40 CFR 257.96(C)(1)	40 CFR 257.96(C)(1)	40 CFR 257.96(C)(2)
Corrective Measure	**Ease of Implementation**	**Potential Impacts**	**Time Requirement to Begin/Complete**
Geochemical Approaches (In-Situ Injection)	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.	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.
Hydraulic Containment ("Pump and Treat")	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.	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.
Monitored Natural Attenuation (MNA)	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.	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 following pond closure. 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.
Permeable Reactive Barrier	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.	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.
Subsurface Vertical Barrier Walls	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.	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.

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

	40 CFR 257.96(C)(3)		
Corrective Measure	**Institutional Requirements**	**Other Env or Public Health Requirements**	**Relative Costs**
Geochemical Approaches (In-Situ Injection)	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.	None expected at this point. Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-2. 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)
Hydraulic Containment ("Pump and Treat")	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.	Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-2. 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)
Monitored Natural Attenuation (MNA)	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.	Little to no physical disruption to remediation areas and no adverse construction-related impacts are expected on the surrounding community. Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-2.	Low to medium
Permeable Reactive Barrier	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.	None expected at this point. Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-2. 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
Subsurface Vertical Barrier Walls	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.	Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-2. 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)

Table 2
Summary of Activity
Plant Hammond AP-2, Floyd County, Georgia

Corrective Measure (CM)	Data Collected/Actions Completed	Applicable Locations Sampled	Applicability & Rationale	Comments/Planned Actions
Geochemical Approaches (In-Situ Injection)	Collected supplementary groundwater samples to evaluate: (i) attenuation mechanisms and rates and aquifer capacity for attenuation; and (ii) amount and distribution of select metal hydroxides or electron donors that may effect geochemical mechanisms	HGWC-14, HGWC-15, HGWC-17, HGWC-18, MW-21D, MW-22	Understand geochemical baseline conditions to evaluate the need for and type of geochemical amendments required to attenuate constituents of interest.	(i) Collect and submit aquifer solid samples for sequential extraction procedure (SEP) for analysis of cobalt (Co) in the aquifer solid matrix; x-ray diffraction (XRD) analysis for mineralogy; total Co, aluminum, iron, manganese, silica concentrations; cation/anion exchange capacity. (ii) Conduct pneumatic slug tests to evaluate aquifer transmissivity, storage coefficient, hydraulic conductivity in support of conducting injections.
Hydraulic Containment	Collected supplementary groundwater samples to evaluate groundwater parameters specific to the existing NPDES permitted discharge limits and capabilities of on-site low volume wastewater treatment plant (LVWTP)	HGWC-15, HGWC-18	Evaluate groundwater concentrations relative to permitted discharge limits for the plant in support of processing/discharging extracted groundwater. Determine if a permit update is required to address potentially new groundwater-specific parameters.	Conduct pneumatic slug tests to evaluate aquifer transmissivity, storage coefficient, hydraulic conductivity in support of designing a groundwater extraction system.
Monitored Natural Attenuation (MNA)	Collected supplementary groundwater samples both upgradient and downgradient of unit to evaluate in situ attenuation mechanisms and rates and aquifer capacity for attenuation	HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, HGWA-6, HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18, MW-21D, MW-22, MW-23D	Evaluate attenuation mechanisms and rates and aquifer capacity for attenuation. Multiple sampling events required to build adequate data set for determining attenuation mechanism trends.	(i) Continue to conduct supplementary groundwater sampling events during pre-closure and closure phase activities to assess plume stability and attenuation mechanisms. (ii) Collect and submit aquifer solid samples for SEP for analysis of Co in the aquifer solid matrix; XRD analysis for mineralogy; total Co, aluminum, iron, manganese, silica concentrations; cation/anion exchange capacity.
Permeable Reactive Barrier (PRB)	Collected supplementary groundwater samples to evaluate attenuation mechanisms and rates and aquifer capacity for attenuation applicable to evaluating reactive media options	HGWC-14, HGWC-15, HGWC-17, HGWC-18, MW-21D, MW-22	Evaluate in situ geochemical conditions and attenuation mechanisms that need to be considered when evaluating reactive media and initial design of a bench-scale treatability study.	(i) Initial identification of possible PRB reactive media based on current dataset, with refinement pending review of subsequent geochemical and aquifer attenuation data. (ii) Conduct pneumatic slug tests to evaluate aquifer transmissivity, storage coefficient, hydraulic conductivity in support of designing a groundwater extraction system.
Subsurface Vertical Barrier Walls	Collected supplementary groundwater samples to evaluate groundwater parameters specific to the existing NPDES permitted discharge limits, since limited pumping (and discharge) of groundwater will be required to maintain an inward hydraulic gradient inside/upgradient of the vertical barrier.	HGWC-15, HGWC-18	Evaluate groundwater concentrations relative to permitted discharge limits for the plant in support of processing/discharging extracted groundwater. Determine if a permit update is required to address potentially new groundwater-specific parameters.	(i) Conduct pneumatic slug tests to evaluate aquifer transmissivity, storage coefficient, hydraulic conductivity in support of developing a groundwater flow model to assess placement of barrier walls, most likely in conjunction with PRBs, and placement of possible groundwater extraction system to maintain designed hydraulic gradients. (ii) Evaluate resources needed to conduct a bench compatibility test of barrier wall material.

Table 3a

Summary of Groundwater Analytical Data - Geochemical Parameter Evaluation

Plant Hammond AP-2, Floyd County, Georgia

Well ID:	HGWA-1	HGWA-2	HGWA-3	HGWA-4	HGWA-5	HGWA-6	HGWC-14
Sample Date:	9/23/2019	9/23/2019	9/23/2019	9/24/2019	9/24/2019	9/24/2019	9/24/2019
Parameter							
Alkalinity, Bicarbonate ($CaCO_3$)	279	29.0	174	109	90.0	158	ND
Alkalinity, Total as $CaCO_3$	279	29.0	174	109	90.0	158	ND
Dissolved Organic Carbon	1.1	2.1	ND	ND (0.85 J)	ND	ND	ND (0.52 J)
Iron	ND (0.022 J)	1.7	0.53	ND (0.021 J)	1.5	0.49	0.84
Magnesium	5.4	2.4	4.8	1.3	5.6	10	53.5
Manganese	0.20	1.1	0.21	0.035	0.077	0.071	5.5
Orthophosphate as P	ND	ND	ND	ND	ND	0.038	ND
Phosphorous	ND	ND	ND (0.026 J)	ND	ND (0.039 J)	ND (0.036 J)	ND
Potassium	0.33	0.88	0.42	ND (0.24 J)	ND (0.65 J)	ND (0.56 J)	12.1
Sodium	20.4	8.7	5.2	8.3	6.2	7.9	12.1
Sulfide	ND	ND	ND	ND	ND	ND	ND

Notes:

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

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

(1) Well is designated a delineation monitoring well.

(2) Parameters are reported in units of milligrams per liter (mg/L).

Table 3a

Summary of Groundwater Analytical Data - Geochemical Parameter Evaluation

Plant Hammond AP-2, Floyd County, Georgia

Well ID:	HGWC-15	HGWC-16	HGWC-17	HGWC-18	MW-21D(1)	MW-22(1)	MW-23D(1)
Sample Date:	9/24/2019	9/25/2019	9/25/2019	9/25/2019	9/25/2019	9/27/2019	9/26/2019
Parameter							
Alkalinity, Bicarbonate ($CaCO_3$)	124	192	182	ND	62.0	93.0	216
Alkalinity, Total as $CaCO_3$	124	192	182	ND	62.0	93.0	216
Dissolved Organic Carbon	ND (0.61 J)	ND	ND (0.72 J)	ND	ND	ND	ND
Iron	0.053	1.5	0.18	0.11	14.6	0.66	0.17
Magnesium	37.9	15.5	31.2	36.0	67.0	46.3	35.4
Manganese	16.3	0.036	4.4	3.7	0.99	16.7	9.0
Orthophosphate as P	ND	0.021	ND	ND	ND	ND	ND
Phosphorous	0.10	0.069	ND	ND	ND (0.032 J)	0.054	ND (0.025 J)
Potassium	0.89	ND (0.76 J)	2.7	8.9	1.1	1.0	2.1
Sodium	14.7	9.9	15.3	10.4	15.3	15.0	13.1
Sulfide	ND	ND	ND	ND	ND	ND	ND

Notes:

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

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

(1) Well is designated a delineation monitoring well.

(2) Parameters are reported in units of milligrams per liter (mg/L).

Table 3b

Summary of Groundwater Analytical Data - NPDES Compliance Evaluation

Plant Hammond AP-2, Floyd County, Georgia

Well ID:	HGWC-15	HGWC-18
Sample Date:	9/24/2019	9/25/2019
Parameter		
Nitrogen, Ammonia	ND	0.56
BOD, 5 day	ND	ND
Oil and Grease	ND	ND
Mercury	0.024	ND
Residual Chlorine	ND	ND
Total Kjeldahl Nitrogen	ND	0.40
Total Organic Nitrogen	ND	ND
Total Suspended Solids	ND	6.0

Notes:

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

NPDES = National Pollutant Discharge Elimination System

(1) Parameters are reported in units of milligrams per liter (mg/L).

Table 4
Proposed ACM Supplementary Data Collection Tasks for First Semi-Annual Period 2020
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
Groundwater sampling	3, 4	Evaluation of: (i) attenuation mechanisms and rates and aquifer capacity for attenuation (ii) in situ conditions to establish phytoremediation measures downgradient of unit	Collect groundwater samples from existing well network currently sampled under the assessment monitoring program.	In addition to routine App III/IV parameters: orthophosphate, phosphorous, sulfide, iron, manganese, magnesium, sodium, potassium, total alkalinity, bicarbonate, dissolved organic carbon (DOC), nitrate/nitrite, total hardness, zinc, total dissolved solids, copper, ammonia nitrogen.	Pace-ATL
Aquifer solids sampling (Collect/Submit archived rock cores)	1, 3, 4	Evaluation of within aquifer matrix: (i) attenuation mechanisms and rates and aquifer capacity for attenuation (ii) mineralogy characterization	Collect samples from extracted rock cores archived at the SCS Civil Field Services (CFS) Logan Martin, AL, facility.	Sequential extraction procedure (SEP) for analysis of cobalt (Co) in the aquifer solid matrix; x-ray diffraction (XRD) analysis for mineralogy; total Co, aluminum, iron, manganese, silica concentrations; cation/anion exchange capacity	TestAmerica-Canton; TestAmerica-Knoxville (SEP); DCM Science Lab (XRD)
Aquifer solids sampling	1, 3, 4	Evaluation of within aquifer matrix: (i) attenuation mechanisms and rates and aquifer capacity for attenuation (ii) mineralogy 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 1-2 background locations).	SEP for analysis of Co in the aquifer solid matrix; XRD analysis for mineralogy; total Co, aluminum, iron, manganese, silica concentrations; cation/anion exchange capacity	TestAmerica-Canton; TestAmerica-Knoxville (SEP); DCM Science Lab (XRD)
Pneumatic slug tests	1, 2, 4, 5	Refine our understanding of hydrogeologic conditions within the anticipated treatment area. Slug data will be used in conjunction with groundwater data to prepare a groundwater flow model that evaluates conceptual CM designs.	Conduct pneumatic slug tests in select wells either not previously tested or in those wells for which historical data may be in question.	Transmissivity, storage coefficient, hydraulic conductivity	n/a

Note:
(1) Corrective Measure (CM) Codes:
1 - Geochemical Approaches (In-Situ Injection)
2 - Hydraulic Containment
3 - Monitored Natural Attenuation (MNA)
4 - Permeable Reactive Barrier (PRB)
5 - Subsurface Vertical Barrier Walls

FIGURES

N

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

0 330 660 1,320

SCALE IN FEET

SITE LOCATION MAP

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

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | DECEMBER 2019

FIGURE 1

\\arc-01\pr1$\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\CCR Reports\AP-2\Figure 1_SiteMap.mxd 7/1/2019 12:30:21 PM

N

LEGEND

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

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

0 150 300 600

SCALE IN FEET

MONITORING WELL NETWORK MAP

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

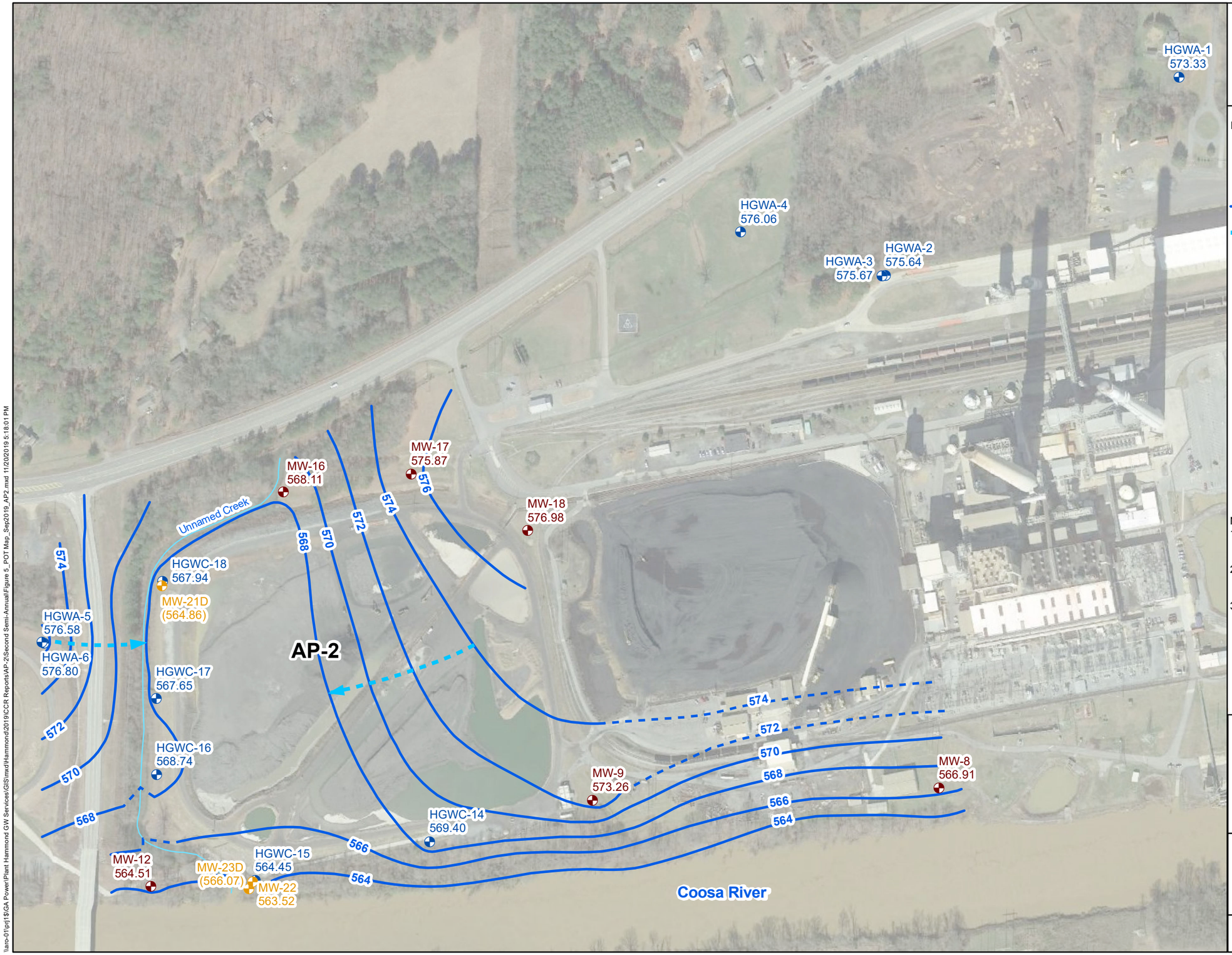
Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | DECEMBER 2019

FIGURE 2

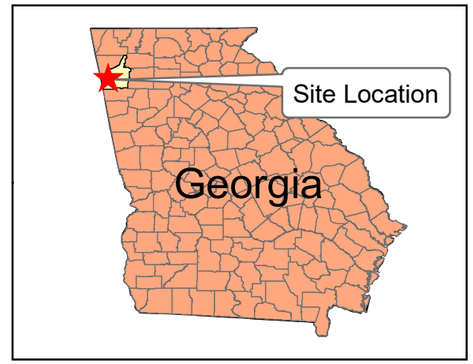
\\aro-01\prj15\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\CCR Reports\AP-2\Figure 2_WellMap.mxd 7/1/2019 12:32:40 PM



N

LEGEND

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



Notes:
1. Water level elevation recorded on September 23, 2019. 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.

0 150 300 450 600

SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOUR MAP - SEPTEMBER 2019

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

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | DECEMBER 2019

FIGURE 3

\\aro-01\prj1$\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\CCR Reports\AP-2\Second Semi-Annual\Figure 5_POT Map_Sep2019_AP2.mxd 11/20/2019 5:18:01 PM

APPENDIX A

Laboratory Analytical Reports

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

October 25, 2019

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

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623499

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 24, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Atlanta Certification IDs

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623499001	**HGWA-1**	Water	09/23/19 16:15	09/24/19 15:23
2623499002	**HGWA-2**	Water	09/23/19 16:55	09/24/19 15:23
2623499003	**HGWA-3**	Water	09/23/19 17:10	09/24/19 15:23

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SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623499001	**HGWA-1**	EPA 6010D	KLH	6	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623499002	**HGWA-2**	EPA 6010D	KLH	6	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623499003	**HGWA-3**	EPA 6010D	KLH	6	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

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

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Sample: HGWA-1 **Lab ID: 2623499001** Collected: 09/23/19 16:15 Received: 09/24/19 15:23 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								
Iron	**0.022J**	mg/L	0.040	0.015	1	10/22/19 14:30	10/23/19 22:51	7439-89-6	
Magnesium	**5.4**	mg/L	0.050	0.011	1	10/22/19 14:30	10/23/19 22:51	7439-95-4	
Manganese	**0.20**	mg/L	0.040	0.0061	1	10/22/19 14:30	10/23/19 22:51	7439-96-5	
Phosphorus	ND	mg/L	0.050	0.023	1	10/22/19 14:30	10/23/19 22:51	7723-14-0	
Potassium	**0.33**	mg/L	0.20	0.026	1	10/22/19 14:30	10/23/19 22:51	7440-09-7	
Sodium	**20.4**	mg/L	1.0	0.19	1	10/22/19 14:30	10/23/19 22:51	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**279**	mg/L	20.0	20.0	1		09/25/19 16:36		
Alkalinity, Total as CaCO3	**279**	mg/L	20.0	20.0	1		09/25/19 16:36		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 12:26		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 09:20	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**1.1**	mg/L	1.0	0.50	1		10/24/19 23:28		H3

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Sample: HGWA-2 **Lab ID: 2623499002** Collected: 09/23/19 16:55 Received: 09/24/19 15:23 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								
Iron	**1.7**	mg/L	0.040	0.015	1	10/22/19 14:30	10/23/19 22:56	7439-89-6	
Magnesium	**2.4**	mg/L	0.050	0.011	1	10/22/19 14:30	10/23/19 22:56	7439-95-4	
Manganese	**1.1**	mg/L	0.040	0.0061	1	10/22/19 14:30	10/23/19 22:56	7439-96-5	
Phosphorus	ND	mg/L	0.050	0.023	1	10/22/19 14:30	10/23/19 22:56	7723-14-0	
Potassium	**0.88**	mg/L	0.20	0.026	1	10/22/19 14:30	10/23/19 22:56	7440-09-7	
Sodium	**8.7**	mg/L	1.0	0.19	1	10/22/19 14:30	10/23/19 22:56	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**29.0**	mg/L	20.0	20.0	1		09/25/19 16:58		
Alkalinity, Total as CaCO3	**29.0**	mg/L	20.0	20.0	1		09/25/19 16:58		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 12:27		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 09:23	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**2.1**	mg/L	1.0	0.50	1		10/25/19 00:17		H3

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Sample: HGWA-3 **Lab ID: 2623499003** Collected: 09/23/19 17:10 Received: 09/24/19 15:23 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								
Iron	**0.53**	mg/L	0.040	0.015	1	10/22/19 14:30	10/23/19 23:24	7439-89-6	
Magnesium	**4.8**	mg/L	0.050	0.011	1	10/22/19 14:30	10/23/19 23:24	7439-95-4	
Manganese	**0.21**	mg/L	0.040	0.0061	1	10/22/19 14:30	10/23/19 23:24	7439-96-5	
Phosphorus	**0.026J**	mg/L	0.050	0.023	1	10/22/19 14:30	10/23/19 23:24	7723-14-0	
Potassium	**0.42**	mg/L	0.20	0.026	1	10/22/19 14:30	10/23/19 23:24	7440-09-7	
Sodium	**5.2**	mg/L	1.0	0.19	1	10/22/19 14:30	10/23/19 23:24	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**174**	mg/L	20.0	20.0	1		09/25/19 17:01		
Alkalinity, Total as CaCO3	**174**	mg/L	20.0	20.0	1		09/25/19 17:01		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 12:28		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 09:25	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/25/19 00:28		H3

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 37339 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 168935 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.015	10/23/19 22:41	
Magnesium	mg/L	ND	0.050	0.011	10/23/19 22:41	
Manganese	mg/L	ND	0.040	0.0061	10/23/19 22:41	
Phosphorus	mg/L	ND	0.050	0.023	10/23/19 22:41	
Potassium	mg/L	ND	0.20	0.026	10/23/19 22:41	
Sodium	mg/L	ND	1.0	0.19	10/23/19 22:41	

LABORATORY CONTROL SAMPLE: 168936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	1.1	107	80-120	
Magnesium	mg/L	1	1.1	107	80-120	
Manganese	mg/L	1	1.1	106	80-120	
Phosphorus	mg/L	1	1.1	107	80-120	
Potassium	mg/L	1	1.1	108	80-120	
Sodium	mg/L	1	1.1	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168937 168938

Parameter	Units	2623499002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	1.7	1	1	2.7	2.8	101	106	75-125	2	20	
Magnesium	mg/L	2.4	1	1	3.4	3.4	101	106	75-125	1	20	
Manganese	mg/L	1.1	1	1	2.1	2.1	101	105	75-125	2	20	
Phosphorus	mg/L	ND	1	1	1.0	1.0	102	103	75-125	1	20	
Potassium	mg/L	0.88	1	1	1.9	1.9	97	101	75-125	2	20	
Sodium	mg/L	8.7	1	1	9.5	9.8	84	112	75-125	3	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 35970 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 161956 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	09/25/19 16:26	

LABORATORY CONTROL SAMPLE: 161957

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	101	101	85-115	

SAMPLE DUPLICATE: 161958

Parameter	Units	2623499001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	279	281	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 35930 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 161749 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/25/19 11:51	

LABORATORY CONTROL SAMPLE: 161750

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.52	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 161862 161863

Parameter	Units	2623499001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.52	0.52	103	103	80-120	0	10	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 35996 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 162154 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/26/19 09:18	

LABORATORY CONTROL SAMPLE: 162155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162156 162157

Parameter	Units	2623499001 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	0.48	0.47	96	94	30-129	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

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 581439 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 3160596 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/24/19 23:00	

LABORATORY CONTROL SAMPLE: 3160597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	19.3	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3160598 3160599

Parameter	Units	2624536004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	20.1	19.8	100	98	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3160600 3160601

Parameter	Units	2624536010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	20.2	20.0	101	100	80-120	1	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623499001	**HGWA-1**	EPA 3010A	37339	EPA 6010D	37380
2623499002	**HGWA-2**	EPA 3010A	37339	EPA 6010D	37380
2623499003	**HGWA-3**	EPA 3010A	37339	EPA 6010D	37380
2623499001	**HGWA-1**	SM 2320B	35970		
2623499002	**HGWA-2**	SM 2320B	35970		
2623499003	**HGWA-3**	SM 2320B	35970		
2623499001	**HGWA-1**	SM 4500-P	35930		
2623499002	**HGWA-2**	SM 4500-P	35930		
2623499003	**HGWA-3**	SM 4500-P	35930		
2623499001	**HGWA-1**	SM 4500-S2 D	35996		
2623499002	**HGWA-2**	SM 4500-S2 D	35996		
2623499003	**HGWA-3**	SM 4500-S2 D	35996		
2623499001	**HGWA-1**	SM 5310B	581439		
2623499002	**HGWA-2**	SM 5310B	581439		
2623499003	**HGWA-3**	SM 5310B	581439		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standad TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon				Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	N	N	N	N	N	N	Y					
1	HGWA-1		G	9/23/19	15:40	9/23/19	16:15	4.8	6	2			3	1				Y	Y	Y	Y	Y	Y	Y					ortho phosphate was field filtered
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

09-23-2019

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Geosyntec	09.23.19	17:45	Nadia Mentors	9/23/19	17:45				
	Nadia Mentors/Geosyntec	9/23/19	19:40	Pace	9.24.19	1413				
	Pace	9.24.19	1523	Charles Hunter	9/24/19	1523	3.8	Y	T	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER: [signature] DATE Signed: 09-23-2019

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

WO# : 2623499

2623499

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GU6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon					Residual Chlorine (Y/N)	
																		Y/N	N	N	N	N	N	Y (NF)						
1	HGWA-2	WT	G	9-22-19	1535	9-22-19	1655	22	6	2			3	1					Y	Y	Y	Y	Y	Y	Y						orthophosphate was filtered in field
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

BRW 9-23-19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9-23-19	1745	Mollie Murton / Geosyntec	9/23/19	1745	
	Mollie Murton / Geosyntec	9/23/19	1940	1 Pace	9.24.19	1483	
	1 Pace	9.24.19	1523	Charlie Hurds	9/24/19	1523	3.8 Y Y Y

WO#: 2623499

PM: BM Due Date: 10/01/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: Ben Weinmann DATE Signed: 9/23/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GWC581	Pace Profile #:	327 (AP)

Regulatory Agency: | State / Location: GA

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

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon					Residual Chlorine (Y/N)	
	Requested Analysis Filtered (Y/N)									N	N	N	N	N	N	Y/N														
1	HGWA-3	WT	G	9/23/19	1611	9/23/19	1710	22	6	2			3	1				Y	Y	Y	Y	Y	Y	Y				N	orthophosphate was field filtered	
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

NM 09/23/19

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)
	Noelia Muskus/Georgia	9/23/19	19:40	1 Pace	9.24.19	1413				
	1 Pace	9.24.19	1523	Charles Hunter	9/24/19	38	X	X	X	X

WO#: 2623499

PM: BM Due Date: 10/01/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/23/19

Pace Analytical

Sample Condition Upon Receipt

WO#: 2623499

PM: BM Due Date: 10/01/19

CLIENT: GAPower-CCR

Client Name: GA Power CCR

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

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

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

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

Thermometer Used 214

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

Cooler Temperature 3.8°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/24/19 CO

Temp should be above freezing to 6°C

Comments:

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

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

November 11, 2019

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

RE: Project: Plant Hammond
Pace Project No.: 2623556

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623556

Atlanta Certification IDs

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623556

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623556001	**FB-01**	Water	09/24/19 17:25	09/25/19 14:03
2623556002	**EB-01**	Water	09/24/19 17:40	09/25/19 14:03

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

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623556

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623556001	**FB-01**	EPA 6010	LEC	7	PASI-O
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623556002	**EB-01**	EPA 6010	LEC	8	PASI-O
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623556

Sample: FB-01 **Lab ID: 2623556001** Collected: 09/24/19 17:25 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	ND	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:32	7439-89-6	
Magnesium	ND	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:32	7439-95-4	
Manganese	ND	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:32	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:32	7723-14-0	N2
Potassium	ND	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:32	7440-09-7	
Sodium	ND	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:32	7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	ND	ug/L	3210	506	1	10/08/19 14:47	10/09/19 21:32		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	0.025	0.00019	1	09/27/19 15:26	10/01/19 10:40	7440-50-8	
Zinc	**0.0023J**	mg/L	0.010	0.0015	1	09/27/19 15:26	10/01/19 10:40	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**0.025**	mg/L	0.00050	0.00014	1	09/30/19 10:50	10/01/19 12:42	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		09/30/19 08:00		
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/02/19 12:49		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/02/19 12:49		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/01/19 16:32		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/27/19 16:27		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		09/27/19 15:39	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:54		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:51	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/26/19 09:30	10/01/19 10:06		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/02/19 12:32		

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623556

Sample: FB-01 **Lab ID: 2623556001** Collected: 09/24/19 17:25 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.016J**	mg/L	0.050	0.0050	1		09/26/19 09:36	14797-55-8	
Nitrite as N	**0.021J**	mg/L	0.050	0.011	1		09/26/19 09:36	14797-65-0	B
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.10	0.10	1		09/30/19 10:31	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	09/30/19 08:40	10/01/19 11:51	7727-37-9	M1
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 14:58		

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623556

Sample: EB-01 **Lab ID: 2623556002** Collected: 09/24/19 17:40 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	ND	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:46	7439-89-6	
Magnesium	ND	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:46	7439-95-4	
Manganese	ND	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:46	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:46	7723-14-0	N2
Potassium	ND	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:46	7440-09-7	
Sodium	ND	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:46	7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	ND	mg/L	3.2	0.51	1	10/08/19 14:47	10/09/19 21:46		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	0.025	0.00019	1	09/27/19 15:26	10/01/19 10:46	7440-50-8	
Zinc	**0.0037J**	mg/L	0.010	0.0015	1	09/27/19 15:26	10/01/19 10:46	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**0.027**	mg/L	0.00050	0.00014	1	09/30/19 10:50	10/01/19 12:45	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		09/30/19 08:00		
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/02/19 12:53		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/02/19 12:53		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/01/19 16:32		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/27/19 16:27		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		09/27/19 15:39	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:56		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:51	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/26/19 09:30	10/01/19 10:08		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/02/19 12:32		

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623556

Sample: EB-01 **Lab ID: 2623556002** Collected: 09/24/19 17:40 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.015J**	mg/L	0.050	0.0050	1		09/26/19 10:38	14797-55-8	
Nitrite as N	**0.022J**	mg/L	0.050	0.011	1		09/26/19 10:38	14797-65-0	B
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.10	0.10	1		09/30/19 10:32	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	09/30/19 08:40	10/01/19 11:53	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 15:37		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36152 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 163281 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/01/19 12:04	

LABORATORY CONTROL SAMPLE: 163282

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0021	83	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163283 163284

Parameter	Units	2623578001 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	0.0019	0.0021	77	83	75-125	8	20	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 576632 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 3133743 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	0.064	10/10/19 13:56	
Iron	mg/L	ND	0.040	0.0092	10/10/19 13:56	
Magnesium	mg/L	ND	0.50	0.084	10/10/19 13:56	
Manganese	mg/L	ND	0.0050	0.00042	10/10/19 13:56	
Phosphorus	mg/L	ND	0.045	0.014	10/10/19 13:56	N2
Potassium	mg/L	ND	1.0	0.15	10/10/19 13:56	
Sodium	mg/L	ND	2.0	0.27	10/10/19 13:56	
Tot Hardness asCaCO3 (SM 2340B	ug/L	ND	3210	506	10/10/19 13:56	

LABORATORY CONTROL SAMPLE: 3133744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	12.5	13.2	105	80-120	
Iron	mg/L	2.5	2.6	105	80-120	
Magnesium	mg/L	12.5	13.0	104	80-120	
Manganese	mg/L	0.25	0.26	106	80-120	
Phosphorus	mg/L	0.25	0.25	99	80-120	N2
Potassium	mg/L	12.5	12.8	103	80-120	
Sodium	mg/L	12.5	13.2	106	80-120	
Tot Hardness asCaCO3 (SM 2340B	ug/L	82700	86400	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3133745 3133746

Parameter	Units	2623752004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	29000 ug/L	12.5	12.5	42.7	41.5	110	100	75-125	3	20	
Iron	mg/L	0.22	2.5	2.5	2.8	2.8	105	103	75-125	1	20	
Magnesium	mg/L	8.5	12.5	12.5	21.6	21.3	105	103	75-125	2	20	
Manganese	mg/L	0.040	0.25	0.25	0.31	0.30	107	103	75-125	3	20	
Phosphorus	mg/L	0.019J	0.25	0.25	0.28	0.28	103	104	75-125	1	20	N2
Potassium	mg/L	0.69J	12.5	12.5	13.6	13.5	103	103	75-125	1	20	
Sodium	mg/L	118	12.5	12.5	135	131	130	102	75-125	3	20	M1
Tot Hardness asCaCO3 (SM 2340B	ug/L	107000	82700	82700	196000	191000	107	102	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36079
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162814
Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Copper	mg/L	ND	0.025	0.00019	09/30/19 19:37	
Zinc	mg/L	ND	0.010	0.0015	09/30/19 19:37	

LABORATORY CONTROL SAMPLE: 162815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	0.1	0.098	98	80-120	
Zinc	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162816 162817

Parameter	Units	2623500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	mg/L	ND	0.1	0.1	0.099	0.094	99	94	75-125	6	20	
Zinc	mg/L	0.0019J	0.1	0.1	0.10	0.097	99	95	75-125	3	20	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36120 Analysis Method: EPA 1664B
QC Batch Method: EPA 1664B Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 163051 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	5.0	09/30/19 08:00	

LABORATORY CONTROL SAMPLE: 163052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.9	100	78-114	

MATRIX SPIKE SAMPLE: 163054

Parameter	Units	2623556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	39.2	37.5	93	78-114	

SAMPLE DUPLICATE: 163053

Parameter	Units	2623453001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		75	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36336 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 164031 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	10/02/19 12:39	

LABORATORY CONTROL SAMPLE: 164032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	48.0	96	85-115	

SAMPLE DUPLICATE: 164047

Parameter	Units	2623614004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	13.5	14.0	4	10	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36262
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623556001, 2623556002

LABORATORY CONTROL SAMPLE: 163778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	357	89	84-108	

SAMPLE DUPLICATE: 163780

Parameter	Units	2623620001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	146	139	5	10	

SAMPLE DUPLICATE: 163844

Parameter	Units	2623559001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	133	124	7	10	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36092 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162876 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	5.0	09/27/19 16:27	

LABORATORY CONTROL SAMPLE: 162877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	100	100	90-110	

SAMPLE DUPLICATE: 162878

Parameter	Units	2623124002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	307	318	4	10	H1

SAMPLE DUPLICATE: 162879

Parameter	Units	2623546003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	34.0	34.0	0	10	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36088 Analysis Method: SM 4500-Cl G
QC Batch Method: SM 4500-Cl G Analysis Description: 4500CL G Chlorine, Total Residual
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162851 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	ND	0.1	0.1	09/27/19 15:35	H6

LABORATORY CONTROL SAMPLE: 162852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	mg/L	1	1	100	86-116	H6

SAMPLE DUPLICATE: 162870

Parameter	Units	2623664001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total Residual	mg/L	0.1	0.1	0	10	H3,H6

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36006 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162241 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/26/19 12:53	

LABORATORY CONTROL SAMPLE: 162242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.51	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162244 162243

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.52	0.51	104	101	80-120	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

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 35996 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162154 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/26/19 09:18	

LABORATORY CONTROL SAMPLE: 162155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162156 162157

Parameter	Units	2623499001 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	0.48	0.47	96	94	30-129	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

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 35994 Analysis Method: SM 5210B
QC Batch Method: SM 5210B Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162151 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/01/19 09:55	1A

LABORATORY CONTROL SAMPLE: 162153

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	198	100	85-115	1A

SAMPLE DUPLICATE: 162313

Parameter	Units	2623577001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	193	192	1	20	1A

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 35990 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162133 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	09/26/19 08:55	
Nitrite as N	mg/L	0.013J	0.050	0.011	09/26/19 08:55	

LABORATORY CONTROL SAMPLE: 162134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.4	104	90-110	
Nitrite as N	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162135 162136

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.016J	10	10	10.2	10.1	102	101	90-110	1	15	
Nitrite as N	mg/L	0.021J	10	10	10.3	10.5	103	105	90-110	2	15	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36095 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162900 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.10	09/30/19 10:18	

LABORATORY CONTROL SAMPLE: 162901

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

MATRIX SPIKE SAMPLE: 162902

Parameter	Units	2623600001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	10	10.2	102	90-110	

MATRIX SPIKE SAMPLE: 162903

Parameter	Units	2623679001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.33	10	12.1	118	90-110	M1

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36141 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 163259 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.40	0.40	10/01/19 11:44	

LABORATORY CONTROL SAMPLE: 163260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.6	96	90-110	

MATRIX SPIKE SAMPLE: 163261

Parameter	Units	2623556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	10	8.8	88	90-110	M1

MATRIX SPIKE SAMPLE: 163262

Parameter	Units	2623649002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	25.8	10	35.3	95	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 574634 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 3122436 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/01/19 14:32	

LABORATORY CONTROL SAMPLE: 3122437

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	18.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122438 3122439

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122440 3122441

Parameter	Units	2623635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623556

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

BATCH QUALIFIERS

Batch: 36230

[1]	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria

ANALYTE QUALIFIERS

1A	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria
B	Analyte was detected in the associated method blank.
H1	Analysis conducted outside the EPA method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623556

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623556001	**FB-01**	EPA 3010	576632	EPA 6010	576717
2623556002	**EB-01**	EPA 3010	576632	EPA 6010	576717
2623556001	**FB-01**	EPA 3005A	36079	EPA 6020B	36104
2623556002	**EB-01**	EPA 3005A	36079	EPA 6020B	36104
2623556001	**FB-01**	EPA 7470A	36152	EPA 7470A	36190
2623556002	**EB-01**	EPA 7470A	36152	EPA 7470A	36190
2623556001	**FB-01**	EPA 1664B	36120		
2623556002	**EB-01**	EPA 1664B	36120		
2623556001	**FB-01**	SM 2320B	36336		
2623556002	**EB-01**	SM 2320B	36336		
2623556001	**FB-01**	SM 2540C	36262		
2623556002	**EB-01**	SM 2540C	36262		
2623556001	**FB-01**	SM 2540D	36092		
2623556002	**EB-01**	SM 2540D	36092		
2623556001	**FB-01**	SM 4500-Cl G	36088		
2623556002	**EB-01**	SM 4500-Cl G	36088		
2623556001	**FB-01**	SM 4500-P	36006		
2623556002	**EB-01**	SM 4500-P	36006		
2623556001	**FB-01**	SM 4500-S2 D	35996		
2623556002	**EB-01**	SM 4500-S2 D	35996		
2623556001	**FB-01**	SM 5210B	35994	SM 5210B	36230
2623556002	**EB-01**	SM 5210B	35994	SM 5210B	36230
2623556001	**FB-01**	TKN-NH3 Calculation	36340		
2623556002	**EB-01**	TKN-NH3 Calculation	36340		
2623556001	**FB-01**	EPA 300.0	35990		
2623556002	**EB-01**	EPA 300.0	35990		
2623556001	**FB-01**	EPA 350.1	36095		
2623556002	**EB-01**	EPA 350.1	36095		
2623556001	**FB-01**	EPA 351.2	36141	EPA 351.2	36143
2623556002	**EB-01**	EPA 351.2	36141	EPA 351.2	36143
2623556001	**FB-01**	SM 5310B	574634		
2623556002	**EB-01**	SM 5310B	574634		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese,magnesium	mercury,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS, TSS, Residual Chlorine	ammonia nitrogen, TKN, TON	BOD (5-day)	Oil and grease by 1664	Residual Chlorine (Y/N)	
	Analyses Test (Y/N)																		N	N	N	N	N	N	N	N	N	N	N	N	
1	FB-01	WT	G	9/24/19	1715	9/24/19	1725	20	10	3	1		5	1					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Collected duplicate 1 (MN)
2	EB-01	WT	G	9/24/19	1730	9/24/19	1740	20	10	3	1		5	1					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

NM 09/24/19

WO# : 2623556

2623556

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Geosyntec	9/24/19	20:10	Pace	9.25.19	1117	
	Pace	9.25.19	1403	M Zahmann	9/25/19	1403	
							3.0 Y Y X

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 09/24/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project # _____

WO#: 2623556

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

PM: BM Due Date: 10/02/19

Tracking #: _____

CLIENT: GAPower-CCR

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

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

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

Cooler Temperature 3.0 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/25/19 MP

Temp should be above freezing to 6°C

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

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

November 11, 2019

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

RE: Project: Plant Hammond
Pace Project No.: 2623562

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623562

Atlanta Certification IDs

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623562

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623562001	**HGWA-5**	Water	09/24/19 12:20	09/25/19 14:03
2623562002	**HGWA-6**	Water	09/24/19 11:27	09/25/19 14:03
2623562003	**HGWA-4**	Water	09/24/19 10:52	09/25/19 14:03
2623562004	**HGWC-14**	Water	09/24/19 12:30	09/25/19 14:03
2623562005	**HGWC-15**	Water	09/24/19 14:25	09/25/19 14:03

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

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623562

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623562001	**HGWA-5**	EPA 6010	LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	MWB	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623562002	**HGWA-6**	EPA 6010	LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	MWB	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623562003	**HGWA-4**	EPA 6010	LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	MWB	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623562004	**HGWC-14**	EPA 6010	LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	MWB	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623562005	**HGWC-15**	EPA 6010D	KLH	7	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	MWB	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623562

Sample: HGWA-5 **Lab ID: 2623562001** Collected: 09/24/19 12:20 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**1.5**	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:51	7439-89-6	
Magnesium	**5.6**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:51	7439-95-4	
Manganese	**0.077**	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:51	7439-96-5	
Phosphorus	**0.039J**	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:51	7723-14-0	N2
Potassium	**0.65J**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:51	7440-09-7	
Sodium	**6.2**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:51	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**90.0**	mg/L	20.0	20.0	1		09/30/19 16:45		
Alkalinity, Total as CaCO3	**90.0**	mg/L	20.0	20.0	1		09/30/19 16:45		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 21:01		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:52	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 15:51		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623562

Sample: HGWA-6 **Lab ID: 2623562002** Collected: 09/24/19 11:27 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.49**	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:56	7439-89-6	
Magnesium	**10**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:56	7439-95-4	
Manganese	**0.071**	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:56	7439-96-5	
Phosphorus	**0.036J**	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:56	7723-14-0	N2
Potassium	**0.56J**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:56	7440-09-7	
Sodium	**7.9**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:56	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**158**	mg/L	20.0	20.0	1		09/30/19 16:55		
Alkalinity, Total as CaCO3	**158**	mg/L	20.0	20.0	1		09/30/19 16:55		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.038**	mg/L	0.020	0.020	1		09/25/19 21:01		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:53	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 16:02		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623562

Sample: HGWA-4 **Lab ID: 2623562003** Collected: 09/24/19 10:52 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.021J**	mg/L	0.040	0.0092	1	10/11/19 01:26	10/11/19 15:23	7439-89-6	
Magnesium	**1.3**	mg/L	0.50	0.084	1	10/11/19 01:26	10/11/19 15:23	7439-95-4	
Manganese	**0.035**	mg/L	0.0050	0.00042	1	10/11/19 01:26	10/11/19 15:23	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/11/19 01:26	10/11/19 15:23	7723-14-0	N2
Potassium	**0.24J**	mg/L	1.0	0.15	1	10/11/19 01:26	10/11/19 15:23	7440-09-7	
Sodium	**8.3**	mg/L	2.0	0.27	1	10/11/19 01:26	10/11/19 15:23	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**109**	mg/L	20.0	20.0	1		09/30/19 16:56		
Alkalinity, Total as CaCO3	**109**	mg/L	20.0	20.0	1		09/30/19 16:56		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 21:03		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:54	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.85J**	mg/L	1.0	0.50	1		10/01/19 16:18		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623562

Sample: HGWC-14 **Lab ID: 2623562004** Collected: 09/24/19 12:30 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.84**	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 22:00	7439-89-6	
Magnesium	**53.5**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 22:00	7439-95-4	
Manganese	**5.5**	mg/L	0.10	0.0084	20	10/08/19 14:47	10/10/19 13:29	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 22:00	7723-14-0	N2
Potassium	**12.1**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 22:00	7440-09-7	
Sodium	**12.1**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 22:00	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/02/19 13:00		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/02/19 13:00		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 21:02		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:55	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.52J**	mg/L	1.0	0.50	1		10/01/19 16:33		

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623562

Sample: HGWC-15 **Lab ID: 2623562005** Collected: 09/24/19 14:25 Received: 09/25/19 14:03 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								
Iron	**0.053**	mg/L	0.040	0.015	1	09/26/19 18:42	10/01/19 22:40	7439-89-6	
Magnesium	**37.9**	mg/L	0.50	0.11	10	09/26/19 18:42	10/06/19 15:52	7439-95-4	
Manganese	**16.3**	mg/L	0.040	0.0061	1	09/26/19 18:42	10/01/19 22:40	7439-96-5	
Phosphorus	**0.10**	mg/L	0.050	0.023	1	09/26/19 18:42	10/03/19 20:38	7723-14-0	
Potassium	**0.89**	mg/L	0.20	0.026	1	09/26/19 18:42	10/03/19 20:38	7440-09-7	
Sodium	**14.7**	mg/L	1.0	0.19	1	09/26/19 18:42	10/03/19 20:38	7440-23-5	
Total Hardness by 2340B	**681**	mg/L	27.0	4.0	10	09/26/19 18:42	10/06/19 15:52		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	**0.00086J**	mg/L	0.025	0.00019	1	09/27/19 15:26	10/01/19 11:56	7440-50-8	
Zinc	**0.0085J**	mg/L	0.010	0.0015	1	09/27/19 15:26	10/01/19 11:56	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**0.024**	mg/L	0.00050	0.00014	1	09/30/19 10:50	10/01/19 12:47	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		09/30/19 08:00		
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**124**	mg/L	20.0	20.0	1		09/30/19 17:10		
Alkalinity, Total as CaCO3	**124**	mg/L	20.0	20.0	1		09/30/19 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1070**	mg/L	10.0	10.0	1		09/26/19 18:05		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/27/19 16:28		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		09/27/19 15:37	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 21:02		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:56	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/26/19 09:30	10/01/19 10:09		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/02/19 12:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623562

Sample: HGWC-15 **Lab ID: 2623562005** Collected: 09/24/19 14:25 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.74**	mg/L	0.050	0.0050	1		09/26/19 10:59	14797-55-8	
Nitrite as N	**0.030J**	mg/L	0.050	0.011	1		09/26/19 10:59	14797-65-0	B
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.10	0.10	1		09/30/19 10:33	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	10/01/19 09:05	10/01/19 13:23	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.61J**	mg/L	1.0	0.50	1		10/01/19 17:25		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36152 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2623562005

METHOD BLANK: 163281 Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/01/19 12:04	

LABORATORY CONTROL SAMPLE: 163282

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0021	83	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163283 163284

Parameter	Units	2623578001 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	0.0019	0.0021	77	83	75-125	8	20	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 576632 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 2623562001, 2623562002, 2623562004

METHOD BLANK: 3133743 Matrix: Water
Associated Lab Samples: 2623562001, 2623562002, 2623562004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.0092	10/10/19 13:56	
Magnesium	mg/L	ND	0.50	0.084	10/10/19 13:56	
Manganese	mg/L	ND	0.0050	0.00042	10/10/19 13:56	
Phosphorus	mg/L	ND	0.045	0.014	10/10/19 13:56	N2
Potassium	mg/L	ND	1.0	0.15	10/10/19 13:56	
Sodium	mg/L	ND	2.0	0.27	10/10/19 13:56	

LABORATORY CONTROL SAMPLE: 3133744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	2.5	2.6	105	80-120	
Magnesium	mg/L	12.5	13.0	104	80-120	
Manganese	mg/L	0.25	0.26	106	80-120	
Phosphorus	mg/L	0.25	0.25	99	80-120	N2
Potassium	mg/L	12.5	12.8	103	80-120	
Sodium	mg/L	12.5	13.2	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3133745 3133746

Parameter	Units	2623752004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	0.22	2.5	2.5	2.8	2.8	105	103	75-125	1	20	
Magnesium	mg/L	8.5	12.5	12.5	21.6	21.3	105	103	75-125	2	20	
Manganese	mg/L	0.040	0.25	0.25	0.31	0.30	107	103	75-125	3	20	
Phosphorus	mg/L	0.019J	0.25	0.25	0.28	0.28	103	104	75-125	1	20	N2
Potassium	mg/L	0.69J	12.5	12.5	13.6	13.5	103	103	75-125	1	20	
Sodium	mg/L	118	12.5	12.5	135	131	130	102	75-125	3	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 577481
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 2623562003

METHOD BLANK: 3139682
Matrix: Water
Associated Lab Samples: 2623562003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.0092	10/11/19 15:14	
Magnesium	mg/L	ND	0.50	0.084	10/11/19 15:14	
Manganese	mg/L	ND	0.0050	0.00042	10/11/19 15:14	
Phosphorus	mg/L	ND	0.045	0.014	10/11/19 15:14	N2
Potassium	mg/L	ND	1.0	0.15	10/11/19 15:14	
Sodium	mg/L	ND	2.0	0.27	10/11/19 15:14	

LABORATORY CONTROL SAMPLE: 3139683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	2.5	2.6	106	80-120	
Magnesium	mg/L	12.5	13.1	105	80-120	
Manganese	mg/L	0.25	0.27	109	80-120	
Phosphorus	mg/L	0.25	0.26	103	80-120	N2
Potassium	mg/L	12.5	13.0	104	80-120	
Sodium	mg/L	12.5	13.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3139684 3139685

Parameter	Units	2623562003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	0.021J	2.5	2.5	2.6	2.6	103	103	75-125	0	20	
Magnesium	mg/L	1.3	12.5	12.5	13.8	13.9	101	101	75-125	0	20	
Manganese	mg/L	0.035	0.25	0.25	0.30	0.30	106	107	75-125	1	20	
Phosphorus	mg/L	ND	0.25	0.25	0.26	0.26	105	104	75-125	0	20	N2
Potassium	mg/L	0.24J	12.5	12.5	12.9	13.0	102	102	75-125	0	20	
Sodium	mg/L	8.3	12.5	12.5	21.2	21.3	103	104	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36024
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D MET
Associated Lab Samples: 2623562005

METHOD BLANK: 162383
Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.015	10/01/19 21:03	
Magnesium	mg/L	ND	0.050	0.011	10/01/19 21:03	
Manganese	mg/L	ND	0.040	0.0061	10/01/19 21:03	
Phosphorus	mg/L	ND	0.050	0.023	10/01/19 21:03	
Potassium	mg/L	ND	0.20	0.026	10/01/19 21:03	
Sodium	mg/L	ND	1.0	0.19	10/01/19 21:03	
Total Hardness by 2340B	mg/L	ND	2.7	0.40	10/01/19 21:03	

LABORATORY CONTROL SAMPLE: 162384

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	1.0	104	80-120	
Magnesium	mg/L	1	1.1	111	80-120	
Manganese	mg/L	1	1.0	105	80-120	
Phosphorus	mg/L	1	1.0	105	80-120	
Potassium	mg/L	1	1.1	107	80-120	
Sodium	mg/L	1	1.1	107	80-120	
Total Hardness by 2340B	mg/L	6.6	7.1	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162385 162386

Parameter	Units	2623499001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	0.022J			1.1	1.1				2	20	
Magnesium	mg/L	5.4			6.9	6.9				1	20	
Manganese	mg/L	0.20			1.2	1.3				1	20	
Phosphorus	mg/L	ND			1.3	1.3				5	20	
Potassium	mg/L	0.33			1.7	1.8				3	20	
Sodium	mg/L	20.4			26.8	27.0				1	20	
Total Hardness by 2340B	mg/L				330	332				1	20	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36079
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Associated Lab Samples: 2623562005

METHOD BLANK: 162814 Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Copper	mg/L	ND	0.025	0.00019	09/30/19 19:37	
Zinc	mg/L	ND	0.010	0.0015	09/30/19 19:37	

LABORATORY CONTROL SAMPLE: 162815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	0.1	0.098	98	80-120	
Zinc	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162816 162817

Parameter	Units	2623500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	mg/L	ND	0.1	0.1	0.099	0.094	99	94	75-125	6	20	
Zinc	mg/L	0.0019J	0.1	0.1	0.10	0.097	99	95	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36120 Analysis Method: EPA 1664B
QC Batch Method: EPA 1664B Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 2623562005

METHOD BLANK: 163051 Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	5.0	09/30/19 08:00	

LABORATORY CONTROL SAMPLE: 163052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.9	100	78-114	

MATRIX SPIKE SAMPLE: 163054

Parameter	Units	2623556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	39.2	37.5	93	78-114	

SAMPLE DUPLICATE: 163053

Parameter	Units	2623453001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		75	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36180 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623562001, 2623562002, 2623562003, 2623562005

METHOD BLANK: 163383 Matrix: Water
Associated Lab Samples: 2623562001, 2623562002, 2623562003, 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	09/30/19 14:21	

LABORATORY CONTROL SAMPLE: 163384

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	100	100	85-115	

SAMPLE DUPLICATE: 163385

Parameter	Units	2623563001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	177	174	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36336
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2623562004

METHOD BLANK: 164031 Matrix: Water
Associated Lab Samples: 2623562004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	10/02/19 12:39	

LABORATORY CONTROL SAMPLE: 164032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	48.0	96	85-115	

SAMPLE DUPLICATE: 164047

Parameter	Units	2623614004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	13.5	14.0	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36029
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623562005

LABORATORY CONTROL SAMPLE: 162444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	393	98	84-108	

SAMPLE DUPLICATE: 162445

Parameter	Units	2623494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	222	248	11	10	D6

SAMPLE DUPLICATE: 162446

Parameter	Units	2623553001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36092 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 2623562005

METHOD BLANK: 162876 Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	5.0	09/27/19 16:27	

LABORATORY CONTROL SAMPLE: 162877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	100	100	90-110	

SAMPLE DUPLICATE: 162878

Parameter	Units	2623124002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	307	318	4	10	H1

SAMPLE DUPLICATE: 162879

Parameter	Units	2623546003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	34.0	34.0	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36088 Analysis Method: SM 4500-Cl G
QC Batch Method: SM 4500-Cl G Analysis Description: 4500CL G Chlorine, Total Residual
Associated Lab Samples: 2623562005

METHOD BLANK: 162851 Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	ND	0.1	0.1	09/27/19 15:35	H6

LABORATORY CONTROL SAMPLE: 162852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	mg/L	1	1	100	86-116	H6

SAMPLE DUPLICATE: 162870

Parameter	Units	2623664001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total Residual	mg/L	0.1	0.1	0	10	H3,H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 35993 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623562001, 2623562002, 2623562003, 2623562004, 2623562005

METHOD BLANK: 162147 Matrix: Water
Associated Lab Samples: 2623562001, 2623562002, 2623562003, 2623562004, 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/25/19 20:56	

LABORATORY CONTROL SAMPLE: 162148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.51	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162149 162150

Parameter	Units	2623562003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.53	0.52	106	104	80-120	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 35996 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623562001, 2623562002, 2623562003, 2623562004, 2623562005

METHOD BLANK: 162154 Matrix: Water
Associated Lab Samples: 2623562001, 2623562002, 2623562003, 2623562004, 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/26/19 09:18	

LABORATORY CONTROL SAMPLE: 162155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162156 162157

Parameter	Units	2623499001 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	0.48	0.47	96	94	30-129	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 35994
QC Batch Method: SM 5210B
Analysis Method: SM 5210B
Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 2623562005

METHOD BLANK: 162151 Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/01/19 09:55	1A

LABORATORY CONTROL SAMPLE: 162153

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	198	100	85-115	1A

SAMPLE DUPLICATE: 162313

Parameter	Units	2623577001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	193	192	1	20	1A

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 35990 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623562005

METHOD BLANK: 162133 Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	09/26/19 08:55	
Nitrite as N	mg/L	0.013J	0.050	0.011	09/26/19 08:55	

LABORATORY CONTROL SAMPLE: 162134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.4	104	90-110	
Nitrite as N	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162135 162136

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.016J	10	10	10.2	10.1	102	101	90-110	1	15	
Nitrite as N	mg/L	0.021J	10	10	10.3	10.5	103	105	90-110	2	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36095
QC Batch Method: EPA 350.1
Analysis Method: EPA 350.1
Analysis Description: 350.1 Ammonia
Associated Lab Samples: 2623562005

METHOD BLANK: 162900 Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.10	09/30/19 10:18	

LABORATORY CONTROL SAMPLE: 162901

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

MATRIX SPIKE SAMPLE: 162902

Parameter	Units	2623600001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	10	10.2	102	90-110	

MATRIX SPIKE SAMPLE: 162903

Parameter	Units	2623679001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.33	10	12.1	118	90-110	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 36222 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 2623562005

METHOD BLANK: 163614 Matrix: Water
Associated Lab Samples: 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.40	0.40	10/01/19 13:03	

LABORATORY CONTROL SAMPLE: 163615

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.7	107	90-110	

MATRIX SPIKE SAMPLE: 163616

Parameter	Units	2623680001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	2.3	10	10.5	82	90-110	M1

MATRIX SPIKE SAMPLE: 163621

Parameter	Units	2623680003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	3.5	10	12.3	88	90-110	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623562

QC Batch: 574634 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623562001, 2623562002, 2623562003, 2623562004, 2623562005

METHOD BLANK: 3122436 Matrix: Water
Associated Lab Samples: 2623562001, 2623562002, 2623562003, 2623562004, 2623562005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/01/19 14:32	

LABORATORY CONTROL SAMPLE: 3122437

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	18.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122438 3122439

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122440 3122441

Parameter	Units	2623635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623562

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

SAMPLE QUALIFIERS

Sample: 2623562005

[1]	Sample was received outside the recognized method holding time; client notified and approved.

BATCH QUALIFIERS

Batch: 36230

[1]	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria

ANALYTE QUALIFIERS

1A	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria
B	Analyte was detected in the associated method blank.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H1	Analysis conducted outside the EPA method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623562

ANALYTE QUALIFIERS

N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623562

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623562001	**HGWA-5**	EPA 3010	576632	EPA 6010	576717
2623562002	**HGWA-6**	EPA 3010	576632	EPA 6010	576717
2623562003	**HGWA-4**	EPA 3010	577481	EPA 6010	577485
2623562004	**HGWC-14**	EPA 3010	576632	EPA 6010	576717
2623562005	**HGWC-15**	EPA 3010A	36024	EPA 6010D	36072
2623562005	**HGWC-15**	EPA 3005A	36079	EPA 6020B	36104
2623562005	**HGWC-15**	EPA 7470A	36152	EPA 7470A	36190
2623562005	**HGWC-15**	EPA 1664B	36120		
2623562001	**HGWA-5**	SM 2320B	36180		
2623562002	**HGWA-6**	SM 2320B	36180		
2623562003	**HGWA-4**	SM 2320B	36180		
2623562005	**HGWC-15**	SM 2320B	36180		
2623562004	**HGWC-14**	SM 2320B	36336		
2623562005	**HGWC-15**	SM 2540C	36029		
2623562005	**HGWC-15**	SM 2540D	36092		
2623562005	**HGWC-15**	SM 4500-Cl G	36088		
2623562001	**HGWA-5**	SM 4500-P	35993		
2623562002	**HGWA-6**	SM 4500-P	35993		
2623562003	**HGWA-4**	SM 4500-P	35993		
2623562004	**HGWC-14**	SM 4500-P	35993		
2623562005	**HGWC-15**	SM 4500-P	35993		
2623562001	**HGWA-5**	SM 4500-S2 D	35996		
2623562002	**HGWA-6**	SM 4500-S2 D	35996		
2623562003	**HGWA-4**	SM 4500-S2 D	35996		
2623562004	**HGWC-14**	SM 4500-S2 D	35996		
2623562005	**HGWC-15**	SM 4500-S2 D	35996		
2623562005	**HGWC-15**	SM 5210B	35994	SM 5210B	36230
2623562005	**HGWC-15**	TKN-NH3 Calculation	36340		
2623562005	**HGWC-15**	EPA 300.0	35990		
2623562005	**HGWC-15**	EPA 350.1	36095		
2623562005	**HGWC-15**	EPA 351.2	36222	EPA 351.2	36226
2623562001	**HGWA-5**	SM 5310B	574634		
2623562002	**HGWA-6**	SM 5310B	574634		
2623562003	**HGWA-4**	SM 5310B	574634		
2623562004	**HGWC-14**	SM 5310B	574634		
2623562005	**HGWC-15**	SM 5310B	574634		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 4

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency

State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese,magnesium	mercury,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS, TSS, Residual Chlorine	ammonia nitrogen, TKN, TON	BOD (5-day)	Oil and grease by 1664	Residual Chlorine (Y/N)	
	Requested Analysis Filtered (Y/N)																	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
1	HGWA-5	WT	G	9/24/19	1111	9/24/19	1220	21	10	3	1		5	1				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	orthophosphate & DOC Grab Filtered
2																																	
3																																	
4																																	
5																																	
6																																	
7																																	
8																																	
9																																	
10																																	
11																																	
12																																	

NM 09/24/19

WO# : 2623562

2623562

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Geosyntec	9/24/19	20:10	Pace	9.25.19	1117	
	Pace	9.25.19	1403	MZalman	9/25/19	1403	
							3.0

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
3.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 09/24/19

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6591	Pace Profile #:	327 (AP)

Regulatory Agency: | State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Y/N	Y	N	N	N	N	N	Y		
1	HGWA-6	WT	G	9/24/19	1015	9/24/19	1127	20	6	2			3	1					Y	Y	Y	Y	Y	Y	Y	N	Orthophosphate field filtered Please filter DOC
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

BDW 9/24/19

WO# : 2623562

PM: BM Due Date: 10/02/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9.24.19	1828	Malia Murdoch	9/24/19	1633	
	Geosyntec / Malia Murdoch	9/24/19	2010	Pace	9.25.19	1117	
	Pace	9.25.19	1403	MZalman	9/25/19	1403	

SAMPLE CONDITIONS				
	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	3.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: Ben W DATE Signed: 9.24.19

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Total alkalinity, bicarbonate	orthophosphate	iron, manganese, magnesium	phosphorous, potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
	MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																	N	N	N	N	N	N	N		
1	HGWA-4	WT	G	9/24/19	10:35	9/24/19	10:52	22.4	6	2			3	1				Y	Y	Y	Y	Y	Y	Y	N	0.1M phosphate & DOC field filtered
2	HGWC-14	WT	G	9/24/19	12:10	9/24/19	12:30	22.4	6	2			3	1				Y	Y	Y	Y	Y	Y	Y	N	same as above
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

09-24-2019

WO#: 2623562

PM: BM Due Date: 10/02/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Dan / Geosyntec	9/24/19	18:10	Malia Mullins / Geosyntec	9/24/19	1810
	Malia Mullins / Geosyntec	9/24/19	2010	Pace	9.25.19	1117
	Pace	9.25.19	1403	MZalman	9/25/19	1403

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
3.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER: [signature] DATE Signed: 9-24-2019

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese,magnesium	mercury,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS, TSS, Residual Clorine	ammonia nitrogen, TKN, TON	BOD (5-day)	Oil and grease by 1664	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	N	N	N	N	N	N	N	N	N	N	N	N		
1	HGWC-15	WT	G	9/24/19	13:45	9/24/19	14:25	23.7	10	3	1		5	1				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	4	orthophosphate & DOC field filtered
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

09-24-2019

WO# : 2623562

PM: BM Due Date: 10/02/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dan / Geosyntec	9/24/19	18:10	Nadia Mushtaq / Geosyntec	9/24/19	1810	
	Nadia Mushtaq / Geosyntec	9/24/19	20:10	Pace	9.25.19	1117	
	Pace	9.25.19	1403	Rachman	9/25/19	1403	

SAMPLE CONDITIONS	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	0.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER: [signature] DATE Signed: 9-24-19

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Docur

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

WO# : 2623562

PM: BM **Due Date: 10/02/19**

CLIENT: GAPower-CCR

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	6W6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																		N	N	N	N	N	N	N		
1	HGWA-5	WT	G	9/24/19	1111	9/24/19	1220	21	6	2			3	1					Y	Y	Y	Y	Y	Y	Y	N	orthophosphate & DOC were field filtered
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

NM 09/24/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Corrected COC for well HGWA-5	Noelia Muskus/Georgia	9/24/19	2010	J Miller/Pace	9/27/19	1142				
				Rahman	9/27/19	1330				
							0.3	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 09/24/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

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

WO# : 2623562

Tracking #:

PM: BM Due Date: 10/02/19

CLIENT: GAPower-CCR

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

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

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

Cooler Temperature 3.0 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/25/19 MP

Temp should be above freezing to 6°C

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

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

Person Contacted: Date/Time:

Comments/ Resolution: The Client submitted exactly same containers with same analyses for HGWA-5 and HGWA-6 instead of what listed on COC for HGWA-5. The Containers labels were used for login purposes for HGWA-5. The updated COC for HGWA-5 was received on 09/27/19 @ 1330.

Project Manager Review: **Date:**

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

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

November 12, 2019

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

RE: Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Atlanta Certification IDs

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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

SAMPLE SUMMARY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623638001	**HGWC-16**	Water	09/25/19 11:00	09/26/19 15:22
2623638002	**HGWC-17**	Water	09/25/19 12:35	09/26/19 15:22
2623638003	**MW-21d**	Water	09/25/19 16:12	09/26/19 15:22
2623638004	**HGWC-18**	Water	09/25/19 14:38	09/26/19 15:22

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623638001	**HGWC-16**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623638002	**HGWC-17**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623638003	**MW-21d**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623638004	**HGWC-18**	EPA 6010	CS2	7	PASI-O
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

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

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Sample: HGWC-16 **Lab ID: 2623638001** Collected: 09/25/19 11:00 Received: 09/26/19 15:22 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**1.5**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:10	7439-89-6	
Magnesium	**15.5**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:10	7439-95-4	
Manganese	**0.036**	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:10	7439-96-5	
Phosphorus	**0.069**	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:10	7723-14-0	N2
Potassium	**0.76J**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:10	7440-09-7	
Sodium	**9.9**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:10	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**192**	mg/L	20.0	20.0	1		10/01/19 17:52		
Alkalinity, Total as CaCO3	**192**	mg/L	20.0	20.0	1		10/01/19 17:52		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.021**	mg/L	0.020	0.020	1		09/27/19 10:42		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:49	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 19:44		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Sample: HGWC-17 **Lab ID: 2623638002** Collected: 09/25/19 12:35 Received: 09/26/19 15:22 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.18**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:13	7439-89-6	
Magnesium	**31.2**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:13	7439-95-4	
Manganese	**4.4**	mg/L	0.10	0.0084	20	10/08/19 16:13	10/10/19 14:58	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:13	7723-14-0	N2
Potassium	**2.7**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:13	7440-09-7	
Sodium	**15.3**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:13	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**182**	mg/L	20.0	20.0	1		10/01/19 18:01		
Alkalinity, Total as CaCO3	**182**	mg/L	20.0	20.0	1		10/01/19 18:01		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:12		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:50	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.72J**	mg/L	1.0	0.50	1		10/01/19 20:41		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Sample: MW-21d **Lab ID: 2623638003** Collected: 09/25/19 16:12 Received: 09/26/19 15:22 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**14.6**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:17	7439-89-6	
Magnesium	**67.0**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:17	7439-95-4	
Manganese	**0.99**	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:17	7439-96-5	
Phosphorus	**0.032J**	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:17	7723-14-0	N2
Potassium	**1.1**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:17	7440-09-7	
Sodium	**15.3**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:17	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**62.0**	mg/L	20.0	20.0	1		10/01/19 18:04		
Alkalinity, Total as CaCO3	**62.0**	mg/L	20.0	20.0	1		10/01/19 18:04		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:12		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:51	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 20:54		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Sample: HGWC-18 **Lab ID: 2623638004** Collected: 09/25/19 14:38 Received: 09/26/19 15:22 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.11**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:20	7439-89-6	
Magnesium	**36.0**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:20	7439-95-4	
Manganese	**3.7**	mg/L	0.025	0.0021	5	10/08/19 16:13	10/09/19 17:59	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:20	7723-14-0	N2
Potassium	**8.9**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:20	7440-09-7	
Sodium	**10.4**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:20	7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	**1060000**	ug/L	6420	1010	2	10/08/19 16:13	10/09/19 17:55		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	**0.0028J**	mg/L	0.025	0.00019	1	09/30/19 12:43	10/01/19 22:07	7440-50-8	
Zinc	**0.16**	mg/L	0.010	0.0015	1	09/30/19 12:43	10/01/19 22:07	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/03/19 09:37	10/03/19 15:38	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.8	4.8	1		10/01/19 07:30		
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/03/19 17:39		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/03/19 17:39		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1950**	mg/L	10.0	10.0	1		10/02/19 12:05		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**6.0**	mg/L	5.0	5.0	1		09/27/19 18:18		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		09/27/19 15:40	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:13		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:52	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/27/19 10:01	10/02/19 12:23		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 00:55		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Sample: HGWC-18 **Lab ID: 2623638004** Collected: 09/25/19 14:38 Received: 09/26/19 15:22 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.081**	mg/L	0.050	0.0050	1		09/27/19 05:10	14797-55-8	B
Nitrite as N	**0.013J**	mg/L	0.050	0.011	1		09/27/19 05:10	14797-65-0	B
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.56**	mg/L	0.10	0.10	1		09/30/19 10:45	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**0.40**	mg/L	0.40	0.40	1	09/30/19 08:40	10/01/19 11:59	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 21:12		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36410 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2623638004

METHOD BLANK: 164385 Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/03/19 14:32	

LABORATORY CONTROL SAMPLE: 164386

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164387 164388

Parameter	Units	2623623008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L				0.0024	0.0024				3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 576681 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 2623638001, 2623638002, 2623638003, 2623638004

METHOD BLANK: 3134011 Matrix: Water
Associated Lab Samples: 2623638001, 2623638002, 2623638003, 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.0092	10/09/19 12:43	
Magnesium	mg/L	ND	0.50	0.084	10/09/19 12:43	
Manganese	mg/L	ND	0.0050	0.00042	10/09/19 12:43	
Phosphorus	mg/L	ND	0.045	0.014	10/09/19 12:43	N2
Potassium	mg/L	ND	1.0	0.15	10/09/19 12:43	
Sodium	mg/L	ND	2.0	0.27	10/09/19 12:43	
Tot Hardness asCaCO3 (SM 2340B	ug/L	ND	3210	506	10/09/19 12:43	

LABORATORY CONTROL SAMPLE: 3134012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	2.5	2.5	98	80-120	
Magnesium	mg/L	12.5	12.2	98	80-120	
Manganese	mg/L	0.25	0.25	98	80-120	
Phosphorus	mg/L	0.25	0.23	92	80-120	N2
Potassium	mg/L	12.5	12.1	97	80-120	
Sodium	mg/L	12.5	12.3	98	80-120	
Tot Hardness asCaCO3 (SM 2340B	ug/L	82700	81100	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3134013 3134014

Parameter	Units	2623635003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	3.1	2.5	2.5	5.6	5.6	98	100	75-125	1	20	
Magnesium	mg/L	8.6	12.5	12.5	21.1	21.2	99	101	75-125	1	20	
Manganese	mg/L	0.17	0.25	0.25	0.42	0.42	98	99	75-125	1	20	
Phosphorus	mg/L	0.083	0.25	0.25	0.33	0.33	98	99	75-125	1	20	N2
Potassium	mg/L	0.31J	12.5	12.5	13.1	13.1	102	103	75-125	0	20	
Sodium	mg/L	11.0	12.5	12.5	23.7	23.8	101	103	75-125	1	20	
Tot Hardness asCaCO3 (SM 2340B	ug/L	337000	82700	82700	418000	421000	99	102	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36170
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Associated Lab Samples: 2623638004

METHOD BLANK: 163336
Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Copper	mg/L	ND	0.025	0.00019	10/01/19 18:14	
Zinc	mg/L	ND	0.010	0.0015	10/01/19 18:14	

LABORATORY CONTROL SAMPLE: 163337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	0.1	0.10	100	80-120	
Zinc	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163338 163339

Parameter	Units	2623623007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	mg/L	ND	0.1	0.1	0.10	0.10	105	102	75-125	2	20	
Zinc	mg/L	0.0017J	0.1	0.1	0.10	0.10	103	102	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36214
QC Batch Method: EPA 1664B
Analysis Method: EPA 1664B
Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 2623638004

METHOD BLANK: 163592 Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	5.0	10/01/19 07:30	

LABORATORY CONTROL SAMPLE: 163593

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.9	100	78-114	

MATRIX SPIKE SAMPLE: 163595

Parameter	Units	2623546004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	50	24.6	44	78-114	M3

MATRIX SPIKE SAMPLE: 163596

Parameter	Units	2623680002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	50	27.5	50	78-114	M3

SAMPLE DUPLICATE: 163594

Parameter	Units	2623546002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		75	

SAMPLE DUPLICATE: 163597

Parameter	Units	2623680004 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		75	

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36284 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623638001, 2623638002, 2623638003

METHOD BLANK: 163853 Matrix: Water
Associated Lab Samples: 2623638001, 2623638002, 2623638003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/01/19 17:35	

LABORATORY CONTROL SAMPLE: 163854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	98.0	98	85-115	

SAMPLE DUPLICATE: 163855

Parameter	Units	2623635002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	165	164	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36448
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2623638004

METHOD BLANK: 164641 Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	10/03/19 17:36	

LABORATORY CONTROL SAMPLE: 164642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	47.0	94	85-115	

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36325
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623638004

LABORATORY CONTROL SAMPLE: 164004

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	421	105	84-108	

SAMPLE DUPLICATE: 164005

Parameter	Units	2623620005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	159	152	5	10	

SAMPLE DUPLICATE: 164006

Parameter	Units	2623623005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	81.0	83.0	2	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36106 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 2623638004

METHOD BLANK: 162939 Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	5.0	09/27/19 18:18	

LABORATORY CONTROL SAMPLE: 162940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	103	103	90-110	

SAMPLE DUPLICATE: 162941

Parameter	Units	2623617001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	48.0	51.0	6	10	

SAMPLE DUPLICATE: 162942

Parameter	Units	2623593001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	82.5	80.0	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36088
QC Batch Method: SM 4500-Cl G
Analysis Method: SM 4500-Cl G
Analysis Description: 4500CL G Chlorine, Total Residual
Associated Lab Samples: 2623638004

METHOD BLANK: 162851
Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	ND	0.1	0.1	09/27/19 15:35	H6

LABORATORY CONTROL SAMPLE: 162852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	mg/L	1	1	100	86-116	H6

SAMPLE DUPLICATE: 162870

Parameter	Units	2623664001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total Residual	mg/L	0.1	0.1	0	10	H3,H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36055 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623638001, 2623638002, 2623638003, 2623638004

METHOD BLANK: 162666 Matrix: Water
Associated Lab Samples: 2623638001, 2623638002, 2623638003, 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/27/19 10:41	

LABORATORY CONTROL SAMPLE: 162667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.52	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162668 162669

Parameter	Units	2623638001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.021	0.5	0.5	0.53	0.53	101	102	80-120	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36186 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623638001, 2623638002, 2623638003, 2623638004

METHOD BLANK: 163399 Matrix: Water
Associated Lab Samples: 2623638001, 2623638002, 2623638003, 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/30/19 14:59	

LABORATORY CONTROL SAMPLE: 163400

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.51	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163401 163402

Parameter	Units	2623644003 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	0.49	0.50	98	100	30-129	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

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36054 Analysis Method: SM 5210B
QC Batch Method: SM 5210B Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 2623638004

METHOD BLANK: 162663 Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/02/19 12:17	1A

LABORATORY CONTROL SAMPLE: 162665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	196	99	85-115	1A

SAMPLE DUPLICATE: 162714

Parameter	Units	2623603001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	364	396	8	20	1A

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36045
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623638004

METHOD BLANK: 162623 Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	0.013J	0.050	0.0050	09/27/19 01:45	
Nitrite as N	mg/L	0.020J	0.050	0.011	09/27/19 01:45	

LABORATORY CONTROL SAMPLE: 162624

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.6	106	90-110	
Nitrite as N	mg/L	10	10.9	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162625 162626

Parameter	Units	2623614003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.66	10	10	11.2	11.2	105	105	90-110	0	15	
Nitrite as N	mg/L	0.020J	10	10	10.9	10.9	109	108	90-110	1	15	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36095
QC Batch Method: EPA 350.1
Analysis Method: EPA 350.1
Analysis Description: 350.1 Ammonia
Associated Lab Samples: 2623638004

METHOD BLANK: 162900 Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.10	09/30/19 10:18	

LABORATORY CONTROL SAMPLE: 162901

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

MATRIX SPIKE SAMPLE: 162902

Parameter	Units	2623600001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	10	10.2	102	90-110	

MATRIX SPIKE SAMPLE: 162903

Parameter	Units	2623679001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.33	10	12.1	118	90-110	M1

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 36141 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 2623638004

METHOD BLANK: 163259 Matrix: Water
Associated Lab Samples: 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.40	0.40	10/01/19 11:44	

LABORATORY CONTROL SAMPLE: 163260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.6	96	90-110	

MATRIX SPIKE SAMPLE: 163261

Parameter	Units	2623556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	10	8.8	88	90-110	M1

MATRIX SPIKE SAMPLE: 163262

Parameter	Units	2623649002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	25.8	10	35.3	95	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

QC Batch: 574634 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623638001, 2623638002, 2623638003, 2623638004

METHOD BLANK: 3122436 Matrix: Water
Associated Lab Samples: 2623638001, 2623638002, 2623638003, 2623638004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/01/19 14:32	

LABORATORY CONTROL SAMPLE: 3122437

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	18.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122438 3122439

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122440 3122441

Parameter	Units	2623635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

BATCH QUALIFIERS

Batch: 36328

[1]	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria

ANALYTE QUALIFIERS

1A	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria
B	Analyte was detected in the associated method blank.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581
Pace Project No.: 2623638

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623638001	**HGWC-16**	EPA 3010	576681	EPA 6010	576722
2623638002	**HGWC-17**	EPA 3010	576681	EPA 6010	576722
2623638003	**MW-21d**	EPA 3010	576681	EPA 6010	576722
2623638004	**HGWC-18**	EPA 3010	576681	EPA 6010	576722
2623638004	**HGWC-18**	EPA 3005A	36170	EPA 6020B	36202
2623638004	**HGWC-18**	EPA 7470A	36410	EPA 7470A	36427
2623638004	**HGWC-18**	EPA 1664B	36214		
2623638001	**HGWC-16**	SM 2320B	36284		
2623638002	**HGWC-17**	SM 2320B	36284		
2623638003	**MW-21d**	SM 2320B	36284		
2623638004	**HGWC-18**	SM 2320B	36448		
2623638004	**HGWC-18**	SM 2540C	36325		
2623638004	**HGWC-18**	SM 2540D	36106		
2623638004	**HGWC-18**	SM 4500-Cl G	36088		
2623638001	**HGWC-16**	SM 4500-P	36055		
2623638002	**HGWC-17**	SM 4500-P	36055		
2623638003	**MW-21d**	SM 4500-P	36055		
2623638004	**HGWC-18**	SM 4500-P	36055		
2623638001	**HGWC-16**	SM 4500-S2 D	36186		
2623638002	**HGWC-17**	SM 4500-S2 D	36186		
2623638003	**MW-21d**	SM 4500-S2 D	36186		
2623638004	**HGWC-18**	SM 4500-S2 D	36186		
2623638004	**HGWC-18**	SM 5210B	36054	SM 5210B	36328
2623638004	**HGWC-18**	TKN-NH3 Calculation	36406		
2623638004	**HGWC-18**	EPA 300.0	36045		
2623638004	**HGWC-18**	EPA 350.1	36095		
2623638004	**HGWC-18**	EPA 351.2	36141	EPA 351.2	36143
2623638001	**HGWC-16**	SM 5310B	574634		
2623638002	**HGWC-17**	SM 5310B	574634		
2623638003	**MW-21d**	SM 5310B	574634		
2623638004	**HGWC-18**	SM 5310B	574634		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Pace Analytical

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 TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GWC5331

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: State / Location: GA

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
																		Y/N	N	N	N	N	N	N	N		
1	MGWC-16	WT	G	9/25/19	10:30	9/25/19	11:00	22.8	6	2			3	1					Y	Y	Y	Y	Y	Y	Y	2	orthophosphate doc Field Filtered
2	MGWC-17	WT	G	9/25/19	12:15	9/25/19	12:35		6	2			3	1					Y	Y	Y	Y	Y	Y	Y	2	
3	MW-21d	WT	G	9/25/19	15:38	9/25/19	16:12		6	2			3	1					Y	Y	Y	Y	Y	Y	Y	2	
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

1 DC 09-25-19

1
2
3

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	[illegible] / Georgia	9/25/19	17:45	Malia Mushim / Georgia	9/25/19	1745	
	Malia Mushim / Geo	9/25/19	1915	1 Pace	9.26.19	1135	
	1 Pace	9.26.19	1522	Charles Hunter	9/26/19	1522	4.0 Y Y Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: DAN GIBBS
SIGNATURE of SAMPLER: [signature] DATE Signed: 9-25-2019

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

WO# : 2623638

2623638

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A — Required Client Information:

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

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GWC581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: | State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese,magnesium	mercury,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS, TSS, Residual Clorine	ammonia nitrogen, TKN, TON	BOD (5-day)	Oil and grease by 1664	Residual Chlorine (Y/N)	2623638
1	HGWC-18	WT	G	9/25/19	13:55	9/25/19	14:38	22.8	10	3	1		5	1				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	(2W) Orthophosphate DOC Field Filtered
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

09-25-2019

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dan Gibbs / Geosyntec	9/25/19	17:45	Marlia Mundon	9/25/19	1745	
	Marlia Mundon / Geosyntec	9/25/19	1915	Pace	9.26.19	1135	
	Pace	9.26.19	1522	Charles Hunter	9/26/19	1522	7.0 X Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dan Gibbs

SIGNATURE of SAMPLER: Dan Gibbs

DATE Signed: 09-25-2019

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical

Sample Condition Upon Rece

Client Name: GA Power

WO# : 2623638

PM: BM **Due Date: 10/03/19**

CLIENT: GAPower-CCR

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

Tracking #:

Proj. Due Date:
Proj. Name:

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

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

Thermometer Used 214

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

Cooler Temperature 4.10

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/26/19 CD

Temp should be above freezing to 6°C

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

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

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

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

November 11, 2019

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

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623704

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Atlanta Certification IDs

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623704001	**EB-02**	Water	09/26/19 17:50	09/27/19 13:15
2623704002	**FB-02**	Water	09/26/19 18:25	09/27/19 13:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623704001	**EB-02**	EPA 6010D	KLH	7	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623704002	**FB-02**	EPA 6010D	KLH	7	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

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ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Sample: EB-02 **Lab ID: 2623704001** Collected: 09/26/19 17:50 Received: 09/27/19 13:15 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								
Iron	ND	mg/L	0.040	0.015	1	10/01/19 12:18	10/06/19 16:59	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/01/19 12:18	10/06/19 16:59	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/01/19 12:18	10/06/19 16:59	7439-96-5	
Phosphorus	**0.041J**	mg/L	0.050	0.023	1	10/01/19 12:18	10/06/19 16:59	7723-14-0	
Potassium	ND	mg/L	0.20	0.026	1	10/01/19 12:18	10/06/19 16:59	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/01/19 12:18	10/06/19 16:59	7440-23-5	
Total Hardness by 2340B	ND	mg/L	2.7	0.40	1	10/01/19 12:18	10/06/19 16:59		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	0.025	0.00019	1	09/30/19 13:30	10/03/19 20:25	7440-50-8	
Zinc	**0.0016J**	mg/L	0.010	0.0015	1	09/30/19 13:30	10/03/19 20:25	7440-66-6	B
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/03/19 17:10	10/04/19 11:50	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		10/02/19 08:00		
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/04/19 14:47		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/04/19 14:47		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**16.0**	mg/L	10.0	10.0	1		10/03/19 16:28		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/30/19 12:16		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		10/01/19 12:28	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 13:59		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:42	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/27/19 21:37	10/02/19 14:49		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

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ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Sample: EB-02 **Lab ID: 2623704001** Collected: 09/26/19 17:50 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		09/28/19 10:57	14797-55-8	
Nitrite as N	**0.017J**	mg/L	0.050	0.011	1		09/28/19 10:57	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.10	0.10	1		09/30/19 11:30	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	10/01/19 09:05	10/01/19 13:15	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.65J**	mg/L	1.0	0.50	1		10/02/19 15:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Sample: FB-02 **Lab ID: 2623704002** Collected: 09/26/19 18:25 Received: 09/27/19 13:15 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								
Iron	ND	mg/L	0.040	0.015	1	10/01/19 12:18	10/06/19 17:04	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/01/19 12:18	10/06/19 17:04	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/01/19 12:18	10/06/19 17:04	7439-96-5	
Phosphorus	ND	mg/L	0.050	0.023	1	10/01/19 12:18	10/06/19 17:04	7723-14-0	
Potassium	ND	mg/L	0.20	0.026	1	10/01/19 12:18	10/06/19 17:04	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/01/19 12:18	10/06/19 17:04	7440-23-5	
Total Hardness by 2340B	ND	mg/L	2.7	0.40	1	10/01/19 12:18	10/06/19 17:04		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	**0.00030J**	mg/L	0.025	0.00019	1	09/30/19 13:30	10/03/19 20:30	7440-50-8	
Zinc	**0.0019J**	mg/L	0.010	0.0015	1	09/30/19 13:30	10/03/19 20:30	7440-66-6	B
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/03/19 17:10	10/04/19 11:53	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		10/02/19 08:00		
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/04/19 15:01		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/04/19 15:01		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/03/19 16:28		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/30/19 12:16		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		10/01/19 12:29	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 13:59		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:43	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/27/19 21:37	10/02/19 14:50		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Sample: FB-02 **Lab ID: 2623704002** Collected: 09/26/19 18:25 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.011J**	mg/L	0.050	0.0050	1		09/28/19 11:39	14797-55-8	
Nitrite as N	**0.018J**	mg/L	0.050	0.011	1		09/28/19 11:39	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.16**	mg/L	0.10	0.10	1		09/30/19 11:31	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	10/01/19 09:05	10/01/19 13:16	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 16:13		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36428 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 164509 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/04/19 10:46	

LABORATORY CONTROL SAMPLE: 164510

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: 164511 164512

Parameter	Units	2623696001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0022	0.0022	88	88	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36168 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163328 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.015	10/06/19 16:50	
Magnesium	mg/L	ND	0.050	0.011	10/06/19 16:50	
Manganese	mg/L	ND	0.040	0.0061	10/06/19 16:50	
Phosphorus	mg/L	ND	0.050	0.023	10/06/19 16:50	
Potassium	mg/L	ND	0.20	0.026	10/06/19 16:50	
Sodium	mg/L	ND	1.0	0.19	10/06/19 16:50	
Total Hardness by 2340B	mg/L	ND	2.7	0.40	10/06/19 16:50	

LABORATORY CONTROL SAMPLE: 163329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	1.0	100	80-120	
Magnesium	mg/L	1	1.0	102	80-120	
Manganese	mg/L	1	1.0	100	80-120	
Phosphorus	mg/L	1	1.0	103	80-120	
Potassium	mg/L	1	1.1	110	80-120	
Sodium	mg/L	1	1.1	108	80-120	
Total Hardness by 2340B	mg/L	6.6	6.8	103	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36173 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163347 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Copper	mg/L	ND	0.025	0.00019	10/03/19 16:32	
Zinc	mg/L	0.0016J	0.010	0.0015	10/03/19 16:32	

LABORATORY CONTROL SAMPLE: 163348

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	0.1	0.099	99	80-120	
Zinc	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163349 163350

Parameter	Units	2623696001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	mg/L	ND	0.1	0.1	0.088	0.090	88	90	75-125	3	20	
Zinc	mg/L	0.0040J	0.1	0.1	0.091	0.096	87	91	75-125	5	20	

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36282 Analysis Method: EPA 1664B
QC Batch Method: EPA 1664B Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163839 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	5.0	10/02/19 08:00	

LABORATORY CONTROL SAMPLE: 163840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.8	100	78-114	

MATRIX SPIKE SAMPLE: 163842

Parameter	Units	2623558001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	23.1	40	80.3	143	78-114	M3

SAMPLE DUPLICATE: 163841

Parameter	Units	2623698001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		75	

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36503 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 164938 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	10/04/19 14:44	

LABORATORY CONTROL SAMPLE: 164939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	47.5	95	85-115	

SAMPLE DUPLICATE: 164940

Parameter	Units	2623704001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	ND		10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36437
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623704001, 2623704002

LABORATORY CONTROL SAMPLE: 164569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 164570

Parameter	Units	2623700006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	225	219	3	10	

SAMPLE DUPLICATE: 164571

Parameter	Units	2623710002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1450	1330	9	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36165 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163320 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	5.0	09/30/19 12:16	

LABORATORY CONTROL SAMPLE: 163321

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	99.5	100	90-110	

SAMPLE DUPLICATE: 163322

Parameter	Units	2623465001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	10.0	ND		10	

SAMPLE DUPLICATE: 163323

Parameter	Units	2623682001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6.5	ND		10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36248 Analysis Method: SM 4500-Cl G
QC Batch Method: SM 4500-Cl G Analysis Description: 4500CL G Chlorine, Total Residual
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163705 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	ND	0.1	0.1	10/01/19 12:26	H6

LABORATORY CONTROL SAMPLE: 163706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	mg/L	1	1	100	86-116	H6

SAMPLE DUPLICATE: 163724

Parameter	Units	2623782001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total Residual	mg/L	0.3	0.3	0	10	H3,H6

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36125 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163138 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/28/19 13:30	

LABORATORY CONTROL SAMPLE: 163139

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.51	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163140 163141

Parameter	Units	2623698004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.50	0.50	100	101	80-120	1	10	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36187 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163403 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/30/19 17:04	

LABORATORY CONTROL SAMPLE: 163404

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163405 163406

Parameter	Units	2623614004 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	0.40	0.40	81	80	30-129	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36102 Analysis Method: SM 5210B
QC Batch Method: SM 5210B Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 162918 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/02/19 14:17	1A

LABORATORY CONTROL SAMPLE: 162920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	205	104	85-115	1A

SAMPLE DUPLICATE: 163019

Parameter	Units	2623686001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	831	690	19	20	1A

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36067 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 162737 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	09/27/19 18:48	
Nitrite as N	mg/L	ND	0.050	0.011	09/27/19 18:48	

LABORATORY CONTROL SAMPLE: 162738

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.5	105	90-110	
Nitrite as N	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162739 162740

Parameter	Units	2623562005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.74			11.2	11.2				0	15	H1
Nitrite as N	mg/L	0.030J			10.7	10.5				2	15	H1

MATRIX SPIKE SAMPLE: 163021

Parameter	Units	2623704001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	ND	10	10.5	105	90-110	
Nitrite as N	mg/L	0.017J	10	10.8	108	90-110	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36150 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163273 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.10	09/30/19 11:18	

LABORATORY CONTROL SAMPLE: 163274

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

MATRIX SPIKE SAMPLE: 163275

Parameter	Units	2623698001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1.4	10	12.0	106	90-110	

MATRIX SPIKE SAMPLE: 163276

Parameter	Units	2623682001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.96	10	11.5	105	90-110	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36222 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163614 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.40	0.40	10/01/19 13:03	

LABORATORY CONTROL SAMPLE: 163615

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.7	107	90-110	

MATRIX SPIKE SAMPLE: 163616

Parameter	Units	2623680001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	2.3	10	10.5	82	90-110	M1

MATRIX SPIKE SAMPLE: 163621

Parameter	Units	2623680003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	3.5	10	12.3	88	90-110	M1

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 575017 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 3124986 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/02/19 15:06	

LABORATORY CONTROL SAMPLE: 3124987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	19.0	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124988 3124989

Parameter	Units	2623704001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	0.65J	20	20	19.6	19.8	95	96	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124990 3124991

Parameter	Units	2623708004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.4	96	96	80-120	1	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

BATCH QUALIFIERS

Batch: 36345

[1]	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria

ANALYTE QUALIFIERS

1A	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria
B	Analyte was detected in the associated method blank.
H1	Analysis conducted outside the EPA method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623704001	**EB-02**	EPA 3010A	36168	EPA 6010D	36254
2623704002	**FB-02**	EPA 3010A	36168	EPA 6010D	36254
2623704001	**EB-02**	EPA 3005A	36173	EPA 6020B	36203
2623704002	**FB-02**	EPA 3005A	36173	EPA 6020B	36203
2623704001	**EB-02**	EPA 7470A	36428	EPA 7470A	36481
2623704002	**FB-02**	EPA 7470A	36428	EPA 7470A	36481
2623704001	**EB-02**	EPA 1664B	36282		
2623704002	**FB-02**	EPA 1664B	36282		
2623704001	**EB-02**	SM 2320B	36503		
2623704002	**FB-02**	SM 2320B	36503		
2623704001	**EB-02**	SM 2540C	36437		
2623704002	**FB-02**	SM 2540C	36437		
2623704001	**EB-02**	SM 2540D	36165		
2623704002	**FB-02**	SM 2540D	36165		
2623704001	**EB-02**	SM 4500-Cl G	36248		
2623704002	**FB-02**	SM 4500-Cl G	36248		
2623704001	**EB-02**	SM 4500-P	36125		
2623704002	**FB-02**	SM 4500-P	36125		
2623704001	**EB-02**	SM 4500-S2 D	36187		
2623704002	**FB-02**	SM 4500-S2 D	36187		
2623704001	**EB-02**	SM 5210B	36102	SM 5210B	36345
2623704002	**FB-02**	SM 5210B	36102	SM 5210B	36345
2623704001	**EB-02**	TKN-NH3 Calculation	36472		
2623704002	**FB-02**	TKN-NH3 Calculation	36472		
2623704001	**EB-02**	EPA 300.0	36067		
2623704002	**FB-02**	EPA 300.0	36067		
2623704001	**EB-02**	EPA 350.1	36150		
2623704002	**FB-02**	EPA 350.1	36150		
2623704001	**EB-02**	EPA 351.2	36222	EPA 351.2	36226
2623704002	**FB-02**	EPA 351.2	36222	EPA 351.2	36226
2623704001	**EB-02**	SM 5310B	575017		
2623704002	**FB-02**	SM 5310B	575017		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW 6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese,magnesium	mercury,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS, TSS, Residual Clorine	ammonia nitrogen, TKN, TON	BOD (5-day)	Oil and grease by 1664	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	N	N	N	N	N	N	N	N	N	N	N	N		
1	EB-02	WT	C	9/26/19	1735	9/26/19	1750	25	10	3	1		5	1				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		1
2	FB-02	WT	G	9/26/19	1800	9/26/19	1825	25	10	3	1		5	1				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		2
3																															
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NM 09/26/19

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)
	Noelia Moskus / Geosyntec	9/26/19	2055	J Mueller / Pace	9/27/19	1142				
				Charles Hardin	9/27/19	1715	2.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Moskus

SIGNATURE of SAMPLER: Noelia Moskus DATE Signed: 9/26/19

WO# : 2623704

2623704

Pace Analytical

Sample Condition Upon Receipt

WO#: 2623704

Client Name: GAPower/CCR

PM: BM Due Date: 10/04/19

CLIENT: GAPower-CCR

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

Tracking #: _____

Proj. Due Date:
Proj. Name:

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

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

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

Cooler Temperature 5.0°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/27/19

Temp should be above freezing to 6°C

Comments:

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

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

November 02, 2019

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

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623705

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623705

Atlanta Certification IDs

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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

SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623705

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623705001	**MW-23d**	Water	09/26/19 10:25	09/27/19 13:15

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

SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623705

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623705001	**MW-23d**	EPA 6010D	KLH	6	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	MWB	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623705

Sample: MW-23d **Lab ID: 2623705001** Collected: 09/26/19 10:25 Received: 09/27/19 13:15 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								
Iron	**0.17**	mg/L	0.040	0.015	1	10/31/19 16:05	11/01/19 01:03	7439-89-6	
Magnesium	**35.4**	mg/L	0.050	0.011	1	10/31/19 16:05	11/01/19 01:03	7439-95-4	M1
Manganese	**9.0**	mg/L	0.040	0.0061	1	10/31/19 16:05	11/01/19 01:03	7439-96-5	M1
Phosphorus	**0.025J**	mg/L	0.050	0.023	1	10/31/19 16:05	11/01/19 01:03	7723-14-0	
Potassium	**2.1**	mg/L	0.20	0.026	1	10/31/19 16:05	11/01/19 01:03	7440-09-7	
Sodium	**13.1**	mg/L	1.0	0.19	1	10/31/19 16:05	11/01/19 01:03	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**216**	mg/L	20.0	20.0	1		10/01/19 18:59		
Alkalinity, Total as CaCO3	**216**	mg/L	20.0	20.0	1		10/01/19 18:59		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 20:41		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:44	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 16:31		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623705

QC Batch: 37765 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2623705001

METHOD BLANK: 171372 Matrix: Water
Associated Lab Samples: 2623705001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.015	11/01/19 00:53	
Magnesium	mg/L	ND	0.050	0.011	11/01/19 00:53	
Manganese	mg/L	ND	0.040	0.0061	11/01/19 00:53	
Phosphorus	mg/L	ND	0.050	0.023	11/01/19 00:53	
Potassium	mg/L	ND	0.20	0.026	11/01/19 00:53	
Sodium	mg/L	ND	1.0	0.19	11/01/19 00:53	

LABORATORY CONTROL SAMPLE: 171373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	1.0	103	80-120	
Magnesium	mg/L	1	1.0	104	80-120	
Manganese	mg/L	1	1.0	104	80-120	
Phosphorus	mg/L	1	1.0	104	80-120	
Potassium	mg/L	1	0.99	99	80-120	
Sodium	mg/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171374 171375

Parameter	Units	2623705001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	0.17	1	1	1.2	1.2	104	102	75-125	2	20	
Magnesium	mg/L	35.4	1	1	36.7	36.1	130	75	75-125	2	20	M1
Manganese	mg/L	9.0	1	1	10.3	10.1	126	110	75-125	2	20	M1
Phosphorus	mg/L	0.025J	1	1	1.1	1.1	107	107	75-125	0	20	
Potassium	mg/L	2.1	1	1	3.3	3.3	119	119	75-125	0	20	
Sodium	mg/L	13.1	1	1	14.3	14.1	125	100	75-125	2	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623705

QC Batch: 36284 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623705001

METHOD BLANK: 163853 Matrix: Water
Associated Lab Samples: 2623705001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/01/19 17:35	

LABORATORY CONTROL SAMPLE: 163854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	98.0	98	85-115	

SAMPLE DUPLICATE: 163855

Parameter	Units	2623635002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	165	164	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623705

QC Batch: 36119
QC Batch Method: SM 4500-P
Analysis Method: SM 4500-P
Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623705001

METHOD BLANK: 163046
Matrix: Water
Associated Lab Samples: 2623705001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/27/19 20:37	

LABORATORY CONTROL SAMPLE: 163047

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.52	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163048 163049

Parameter	Units	2623707001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.50	0.51	100	102	80-120	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

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623705

QC Batch: 36187 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623705001

METHOD BLANK: 163403 Matrix: Water
Associated Lab Samples: 2623705001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/30/19 17:04	

LABORATORY CONTROL SAMPLE: 163404

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163405 163406

Parameter	Units	2623614004 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	0.40	0.40	81	80	30-129	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623705

QC Batch: 575017 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623705001

METHOD BLANK: 3124986 Matrix: Water
Associated Lab Samples: 2623705001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/02/19 15:06	

LABORATORY CONTROL SAMPLE: 3124987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	19.0	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124988 3124989

Parameter	Units	2623704001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	0.65J	20	20	19.6	19.8	95	96	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124990 3124991

Parameter	Units	2623708004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.4	96	96	80-120	1	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Hammond GW6581
Pace Project No.: 2623705

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623705

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623705001	**MW-23d**	EPA 3010A	37765	EPA 6010D	37960
2623705001	**MW-23d**	SM 2320B	36284		
2623705001	**MW-23d**	SM 4500-P	36119		
2623705001	**MW-23d**	SM 4500-S2 D	36187		
2623705001	**MW-23d**	SM 5310B	575017		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test: Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon					Residual Chlorine (Y/N)	
	MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																	N	N	N	N	N	N	N					
1	MW-23d	WT	G	09/24/19	09:40	09/24/19	10:25	19.2	6	2			3	1				Y	Y	Y	Y	Y	Y	Y					N	orthophosphate & DOC Field Filtered
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

09-26-2019

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)
	Dan Gebbs / Geosyntec	9/26/2019	1900	Malia Murdan / Geosyntec	9/26/19	1900				
	Malia Murdan / Geosyntec	9/26/19	2055	J Miller Pace	9/27/19	1147				
				Charles Hunter	9/27/19	1315	2.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dan Gebbs

SIGNATURE of SAMPLER: [signature]

DATE Signed: 09-26-2019

WO# : 2623705

2623705

Pace Analytical

Sample Condition Upon Receip

WO# : 2623705

Client Name: GAPower/CCR

PM: BM **Due Date: 10/04/19**

CLIENT: GAPower-CCR

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

Tracking #: _____

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

Proj. Due Date:
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 5.1°C **Biological Tissue is Frozen:** Yes No

Date and Initials of person examining contents: 9/27/19

Temp should be above freezing to 6°C

Comments:

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

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

October 07, 2019

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

RE: Project: Plant Hammond
Pace Project No.: 2623750

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623750

Atlanta Certification IDs

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623750

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623750001	**MW-22**	Water	09/27/19 10:55	09/30/19 12:39

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

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623750

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623750001	**MW-22**	EPA 6010D	KLH	6	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

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

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623750

Sample: MW-22 **Lab ID: 2623750001** Collected: 09/27/19 10:55 Received: 09/30/19 12:39 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								
Iron	**0.66**	mg/L	0.040	0.015	1	10/02/19 13:49	10/06/19 16:25	7439-89-6	
Magnesium	**46.3**	mg/L	0.050	0.011	1	10/02/19 13:49	10/06/19 16:25	7439-95-4	M1
Manganese	**16.7**	mg/L	0.040	0.0061	1	10/02/19 13:49	10/06/19 16:25	7439-96-5	M1
Phosphorus	**0.054**	mg/L	0.050	0.023	1	10/02/19 13:49	10/06/19 16:25	7723-14-0	
Potassium	**1.0**	mg/L	0.20	0.026	1	10/02/19 13:49	10/06/19 16:25	7440-09-7	
Sodium	**15.0**	mg/L	1.0	0.19	1	10/02/19 13:49	10/06/19 16:25	7440-23-5	M1
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**93.0**	mg/L	20.0	20.0	1		10/03/19 14:24		
Alkalinity, Total as CaCO3	**93.0**	mg/L	20.0	20.0	1		10/03/19 14:24		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:37		H3
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 13:49	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/04/19 09:43		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623750

QC Batch: 36332
QC Batch Method: EPA 3010A
Associated Lab Samples: 2623750001

Analysis Method: EPA 6010D
Analysis Description: 6010D MET

METHOD BLANK: 164020 Matrix: Water
Associated Lab Samples: 2623750001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.015	10/06/19 16:06	
Magnesium	mg/L	ND	0.050	0.011	10/06/19 16:06	
Manganese	mg/L	ND	0.040	0.0061	10/06/19 16:06	
Phosphorus	mg/L	ND	0.050	0.023	10/06/19 16:06	
Potassium	mg/L	ND	0.20	0.026	10/06/19 16:06	
Sodium	mg/L	ND	1.0	0.19	10/06/19 16:06	

LABORATORY CONTROL SAMPLE: 164021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	0.96	96	80-120	
Magnesium	mg/L	1	0.98	98	80-120	
Manganese	mg/L	1	0.96	96	80-120	
Phosphorus	mg/L	1	1.0	102	80-120	
Potassium	mg/L	1	1.0	103	80-120	
Sodium	mg/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164022 164023

Parameter	Units	2623750001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	0.66	1	1	1.7	1.7	105	100	75-125	3	20	
Magnesium	mg/L	46.3	1	1	50.2	48.4	389	209	75-125	4	20	M1
Manganese	mg/L	16.7	1	1	18.6	17.7	189	101	75-125	5	20	M1
Phosphorus	mg/L	0.054	1	1	1.1	1.1	109	109	75-125	0	20	
Potassium	mg/L	1.0	1	1	2.3	2.2	122	113	75-125	4	20	
Sodium	mg/L	15.0	1	1	16.8	16.3	184	131	75-125	3	20	M1

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623750

QC Batch: 36366
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623750001

METHOD BLANK: 164227
Matrix: Water
Associated Lab Samples: 2623750001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/03/19 11:56	

LABORATORY CONTROL SAMPLE: 164228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	96.0	96	85-115	

SAMPLE DUPLICATE: 164468

Parameter	Units	2623706006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	173	172	1	10	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623750

QC Batch: 36245 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623750001

METHOD BLANK: 163688 Matrix: Water
Associated Lab Samples: 2623750001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/01/19 15:34	

LABORATORY CONTROL SAMPLE: 163689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.52	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163690 163691

Parameter	Units	2623750001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.50	0.51	100	101	80-120	2	10	H3

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623750

QC Batch: 36416
QC Batch Method: SM 4500-S2 D
Analysis Method: SM 4500-S2 D
Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623750001

METHOD BLANK: 164448 Matrix: Water
Associated Lab Samples: 2623750001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	10/03/19 13:40	

LABORATORY CONTROL SAMPLE: 164449

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.43	87	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164450 164451

Parameter	Units	2623698001 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	ND	ND	17	15	30-129		10	M1

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623750

QC Batch: 575346 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623750001

METHOD BLANK: 3126906 Matrix: Water
Associated Lab Samples: 2623750001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/04/19 06:33	

LABORATORY CONTROL SAMPLE: 3126907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	18.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3126908 3126909

Parameter	Units	2623752004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	1.8	20	20	21.1	20.9	97	96	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623750

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623750

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623750001	**MW-22**	EPA 3010A	36332	EPA 6010D	36376
2623750001	**MW-22**	SM 2320B	36366		
2623750001	**MW-22**	SM 4500-P	36245		
2623750001	**MW-22**	SM 4500-S2 D	36416		
2623750001	**MW-22**	SM 5310B	575346		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon				Residual Chlorine (Y/N)
																		N	N	N	N	N	N	N	N			
1	MW-22	WT	G	9/26/19	1014	9/26/19	1055	20	6	2			3	1				Y	Y	Y	Y	Y	Y	Y				2
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

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

09/27/19

WO#: 2623750

2623750

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Geosyntec	9/29/19	2130	Pace	9.30.19	1034	
	Pace	9.30.19	1239	MDaliman	9/30/19	1239	
							2.9
							Y
							Y
							Y

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/27/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

WO#: 2623750

PM: BM **Due Date: 10/07/19**

CLIENT: GAPower-CCR

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

Tracking #:

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

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

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

Cooler Temperature 2.9 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: 9/30/19 MR

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

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

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

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

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

October 09, 2019

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

RE: Project: Plant Hammond AP GW6581
Pace Project No.: 2623792

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 01, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623792

Atlanta Certification IDs

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

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

SAMPLE SUMMARY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623792

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623792001	**PMW-04**	Water	09/30/19 14:32	10/01/19 12:05

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581
Pace Project No.: 2623792

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2623792001	**PMW-04**	EPA 6020B	CSW	2
		EPA 300.0	MWB	1

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

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623792

Sample: PMW-04 **Lab ID: 2623792001** Collected: 09/30/19 14:32 Received: 10/01/19 12:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	**20.6**	mg/L	2.0	0.25	50	10/03/19 17:28	10/07/19 14:30	7440-42-8	
Cobalt	ND	mg/L	0.0025	0.00030	1	10/03/19 17:28	10/05/19 16:51	7440-48-4	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**880**	mg/L	100	1.7	100		10/09/19 00:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623792

QC Batch: 36434
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Associated Lab Samples: 2623792001

METHOD BLANK: 164547 Matrix: Water
Associated Lab Samples: 2623792001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	0.0049	10/05/19 14:53	
Cobalt	mg/L	ND	0.0025	0.00030	10/05/19 14:53	

LABORATORY CONTROL SAMPLE: 164548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164549 164550

Parameter	Units	2623793002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.025J	1	1	1.1	1.0	103	100	75-125	4	20	
Cobalt	mg/L	0.00042J	0.1	0.1	0.10	0.097	102	96	75-125	6	20	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623792

QC Batch: 36584 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623792001

METHOD BLANK: 165271 Matrix: Water
Associated Lab Samples: 2623792001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.017	10/09/19 00:04	

LABORATORY CONTROL SAMPLE: 165272

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	10	10.4	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 165273 165274

Parameter	Units	2623792001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	880	1000	1000	1860	1860	98	98	90-110	0	15	

MATRIX SPIKE SAMPLE: 165275

Parameter	Units	2623793001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	17.5	10	26.4	89	90-110	M1

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REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623792

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581
Pace Project No.: 2623792

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623792001	**PMW-04**	EPA 3005A	36434	EPA 6020B	36455
2623792001	**PMW-04**	EPA 300.0	36584		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6501	Pace Profile #:	327 (AP)

Regulatory Agency: State / Location: GA

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

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test: Arsenic	Boron	Cobalt	Molybdenum	Sulfate	Residual Chlorine (Y/N)
1	PMW-04	WT	G	9/30/19	1425	9/30/19	1432	10.4	2	1		1						-	Y	Y	-	Y	N
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

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

NM

09/30/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus/Geosyntec	9/30/19	1725	Chad Russo geo	9/30	1725	
	Chad Russo geo	9/30	1900	Oscar Baynard Pace	10/1/19	10:30	
				Charles Fenter	10/1/19	1205	5.1 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/30/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

WO#: 2623792

2623792

Pace Analytical

Sample Condition Upon Receipt

WO# : 2623792

Client Name: GAPower CCR

PM: BM Due Date: 10/08/19

CLIENT: GAPower-CCR

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

Optional
Proj. Due Date:
Proj. Name:

Tracking #: _____

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

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

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

Cooler Temperature 5 | 2c Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/11/19 CHK

Temp should be above freezing to 6°C Comments:

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

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

October 15, 2019

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

RE: Project: Plant Hammond AP GW6581
Pace Project No.: 2623869

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

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

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

CERTIFICATIONS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623869

Atlanta Certification IDs

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

Asheville Certification IDs

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

SAMPLE SUMMARY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623869

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623869001	**PMW-03**	Water	10/01/19 09:04	10/02/19 13:52

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581
Pace Project No.: 2623869

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623869001	**PMW-03**	EPA 6020B	CSW	2	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A

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

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623869

Sample: PMW-03 **Lab ID: 2623869001** Collected: 10/01/19 09:04 Received: 10/02/19 13:52 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	**2.8**	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 19:16	7440-42-8	
Cobalt	**0.053**	mg/L	0.0025	0.00030	1	10/04/19 14:03	10/07/19 19:16	7440-48-4	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Sulfate	**420**	mg/L	14.0	7.0	14		10/13/19 10:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623869

QC Batch: 36492
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Associated Lab Samples: 2623869001

METHOD BLANK: 164870 Matrix: Water
Associated Lab Samples: 2623869001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	0.0049	10/07/19 17:47	
Cobalt	mg/L	ND	0.0025	0.00030	10/07/19 17:47	

LABORATORY CONTROL SAMPLE: 164871

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.0	101	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164872 164873

Parameter	Units	2623808004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.048	1	1	1.0	1.0	99	99	75-125	0	20	
Cobalt	mg/L	0.00049J	0.1	0.1	0.095	0.10	94	99	75-125	5	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623869

QC Batch: 503241 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: 2623869001

METHOD BLANK: 2705166 Matrix: Water
Associated Lab Samples: 2623869001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.50	10/12/19 15:31	

LABORATORY CONTROL SAMPLE: 2705167

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	50.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2705168 2705169

Parameter	Units	2624007001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	13.6	50	50	62.1	58.4	97	90	90-110	6	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2705170 2705171

Parameter	Units	92449004022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	466	50	50	501	506	70	79	90-110	1	10	M6

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623869

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

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581
Pace Project No.: 2623869

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623869001	**PMW-03**	EPA 3005A	36492	EPA 6020B	36507
2623869001	**PMW-03**	EPA 300.0 Rev 2.1 1993	503241		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A — Required Client Information:

Company:	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 TA

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: State / Location: GA

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Arsenic	Boron	Cobalt	Molybdenum	Sulfate	Residual Chlorine (Y/N)
1	PMW-03	WT	G	10/01/19	0856	10/01/19	0904	23	2	1		1						-	Y	Y	-	Y		N
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NM 10/01/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Example	10/02/19	11:30	Pace	10.2.19	1130	
	Pace	10.2.19	1352	Charles Hunter	10/2/19	1352	7.8 Y Y Y

WO# : 2623869

2623869

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 10/01/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

WO# : 2623869

PM: BM Due Date: 10/09/19

CLIENT: GAPower-CCR

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power CCR

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

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

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

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

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

Cooler Temperature 1.8c Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/2/19 CH

Temp should be above freezing to 6°C

Comments:

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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