Prepared for



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SEMI-ANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT PLANT HAMMOND ASH POND 1 (AP-1)

Prepared by



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SEMI-ANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT GEORGIA POWER COMPANY - PLANT HAMMOND

ASH POND 1 (AP-1)

This Semi-Annual Remedy Selection and Design Progress Report, Georgia Power Company - Plant Hammond, Ash Pond 1 (AP-1), 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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LIST OF ACRONYMS

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

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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 1 (AP-1 or Site). Specifically, this Semi-Annual Remedy Selection Progress Report bas 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 1 (AP-1)* (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 arsenic and molybdenum identified in groundwater at AP-1 (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-1:

- 1. Geochemical Manipulation (In-Situ Injection)
- 2. Hydraulic Containment (Pump and Treat)
- 3. Monitored Natural Attenuation (MNA)
- 4. Permeable Reactive Barrier (PRB)
- 5. Phytoremediation
- 6. 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-1 is a 35-acre surface impoundment located at Plant Hammond that received CCR materials from its commission in 1952 until 1969. After 1969, AP-1 was utilized as a cotreatment pond to handle return water flows from the other ponds and for recycling of process water for plant operations. As of April 17, 2019, all process plant flows to AP-1 ceased. GPC will close AP-1 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 <u>Nature and Extent Delineation</u>

CCR compliance groundwater monitoring-related activities have been performed for AP-1 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 arsenic and molybdenum were identified within the 2018 data for the following wells:

- Arsenic: HGWC-13; and
- Molybdenum: HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, and HGWC-13

The HGWC-13 arsenic concentrations reported in 2018 exceeded the US EPA and GA EPD groundwater protection standards (GWPS), as derived pursuant to US EPA rule 40 CFR § 257.95(h) and GA EPD CCR Rule 391-3-4-.10(6)(a). The molybdenum concentrations in wells HGWC-7, HGWC-9, HGWC-11, HGWC-12, and HGWC-13 exceeded the GA EPD GWPS, but not the US EPA GWPS, whereas molybdenum concentrations in well HGWC-8 exceeded both the state and federal GWPS. 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-1 continues to be monitored during the remedy selection phase in accordance with the established assessment monitoring program. As part of the assessment program, nine additional groundwater monitoring wells were installed in 2018 and 2019 to provide additional data to characterize flow conditions downgradient of AP-1 and to horizontally and vertically delineate SSLs of arsenic and molybdenum from the six target wells previously listed. Wells MW-19, MW-20, and MW-29 were installed for horizontal delineation and wells MW-24D, MW-25D, MW-26D, MW-27D, MW-28D, and MW-30D were installed for vertical delineation. The delineation well network was supplemented by adding

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piezometers MW-5, MW-6, and MW-7, which were originally installed in 2014 to gauge water levels downgradient of AP-1. These three piezometers were suitably located downgradient of AP-1 and therefore reallocated as horizontal delineation wells. The locations of these nine 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 arsenic and molybdenum concentrations in horizontal delineation wells MW-5, MW-6, MW-7, MW-20, and MW-29 are below state and federal GWPS and therefore delineate the two constituents to within the property boundary. The arsenic concentration reported in well MW-24D is below the state and federal GWPS, and therefore vertically delineates the arsenic SSL reported for well HGWC-13. Similarly, the molybdenum concentrations in wells MW-24D, MW-25D, and MW-27D are less than the GWPS and therefore vertically delineate molybdenum SSLs in wells HGWC-13, HGWC-11, HGWC-12, and HGWC-8, respectively (the location of MW-25D delineates both HGWC-11 and HGWC-12). Vertical delineation of molybdenum in wells HGWC-7 and HGWC-9 is currently in progress. 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).

2.2 <u>Summary of Corrective Measures</u>

The closure of AP-1 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 arsenic and molybdenum.
- **Hydraulic Containment (Pump and Treat):** The 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.*
- **Phytoremediation:** *Phytoremediation uses trees and other plants to degrade or immobilize constituents or achieve hydraulic control without the need for an above-ground water treatment system and infrastructure.*
- 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-1 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 onsite 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-1 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, 3b,** and **3c**. 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 and Corrective Action Report (pending submission January 31, 2020).

The laboratory reports associated with the data presented on Tables 3a, 3b, and 3c 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-1 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 remedy selection progress reports to document AP-1 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 remedy selection 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 report. Record keeping, notifications, and publicly accessible internet site requirements for the semi-annual remedy selection 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-1 and AP-2). January 2019.
- Geosyntec Consultants, 2019b. Assessment of Corrective Measures Report Plant Hammond Ash Pond 1 (AP-1). 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-1, Floyd County, Georgia

Corrective Measure	Regulatory Citation for Criteria: Description	40 CFR 2 Performance	57.96(C)(1) Reliab
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 As and Mo. Under anaerobic conditions, As would be attenuated within sparingly soluble sulfide minerals; this approach might also increase the attenuation of Mo. 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 As (and potentially, Mo) onto these mineral phases. If sufficient iron is present in groundwater, the use of air sparging alone may be considered to precipitate iron (oxy-) hydroxides for sorption. In-situ chemical oxidation (ISCO) or in-situ chemical reduction (ISCR) can be used to chemically alter the redox environment in the subsurface to affect the mobility of certain inorganic compounds, including As.	The effective immobilization of As 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	Reliability dependent on permeability of th distribution of secondary iron or manganes approach), or electron donors and soluble be consistently distributed (for anaerobic a injected materials can be distributed throug and/or pilot-scale treatability testing progr biogeochemical processes that would effec 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 As and Mo.	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-1, 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 containme groundwater remediation goals can be ach without further understanding attenuation
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 arsenic (As) and molybdenum (Mo) at AP-1, 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 As and Mo, the main attenuation processes include sorption to iron and manganese oxides (As and Mo), and formation of sparingly soluble sulfide minerals (As).	Physical and chemical MNA mechanisms for arsenic and molybdenum, 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 As and Mo are already occurring at the site as evidenced by groundwater 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 As and Mo at AP-1 will further enhance ongoing MNA.	Reliable as long as the aquifer conditions remain favorable and/or are being enhance present. MNA is reliable and can either b measure for groundwater impacted by diss 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 As and Mo. The carbon could be composed of peat moss, mulch or another carbon source. Exact placement of the PRB is contingent on finalization of the nature and extent characterization. PRB walls are typically keyed into the bedrock. While the shallow groundwater in the residuum and fractured bedrock is connected to the groundwater in more competent bedrock, the higher permeability/conductivity of the PRB is not expected to impede groundwater flow. PRBs can also be constructed as "funnel and gate" systems, where a barrier wall directs groundwater to a smaller "treatment gate" filled with reactive media.	PRBs have been shown to effectively address As in groundwater, but additional testing is required for Mo to select the appropriate reactive media. The approach is expected to achieve GWPS for both constituents as impacted groundwater passes through the reactive barrier. Mo redox kinetics may be slow and hence a thicker wall might be needed relative to solely treating for As. Furthermore, additional testing is required to select the appropriate sorptive media mix, especially related to Mo.	Reliable groundwater corrective measure t time may require re-installation depending Additional data collection, including cond needed to better characterize current atten appropriate reactive media mix for a PRB
Phytoremediation / <i>TreeWells</i>	Phytoremediation uses trees and other plants to degrade or immobilize constituents or achieve hydraulic control without the need for an above-ground water treatment system and infrastructure. Within the context of AP-1, this corrective measure would likely use an engineered (proprietary) TreeWell® phytoremediation system along the point of compliance or downgradient edge of the impacted groundwater for hydraulic control. The system promotes root development to the targeted groundwater zone (depth), allowing for hydraulic control of impacted groundwater. In addition, immobilization of As and Mo within the root zone as well as incidental uptake of dissolved As and Mo with groundwater is expected to occur concurrent with hydraulic control.	Once established (typically at the end of the third growing season), a TreeWell system is effective for providing hydraulic containment of groundwater, and potential reduction of As and Mo concentrations through immobilization and/or uptake and sequestration in the tree biomass; however, the main purpose is to provide hydraulic control. Given the current groundwater flow velocities, the approach is currently not considered viable. However, changing site conditions may make the corrective measure viable for the area downgradient of AP-1. Additional aquifer testing and/or groundwater flow modeling may be needed to confirm the suitability at that time.	Engineered phytoremediation is a proven are taken into account (e.g., hydraulic con impacted groundwater zone, etc.). This is approach through the use of trees as the "r design will be needed to select the proper consideration of groundwater chemistry, p groundwater flow modeling to evaluate th TreeWell units.
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-1, 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 As and Mo above GWPS could either be directed to "treatment gates" for passive treatment (in a PRB) or migration of impacted groundwater could be minimized via barrier wall installation. Additional subsurface investigations, aquifer testing, and compatibility testing with site-specific groundwater will be needed.	Generally reliable as a barrier to groundwa downgradient groundwater is incidental ar

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of the subsurface and the amount and ganese (oxy-) hydroxides (for aerobic uble iron or manganese and sulfur that can bic approach). Reliable technology if hroughout the impacted aquifer. Benchrograms are needed to understand the effectively reduce migration of As and Mo

nment, but uncertainty exists whether achieved within a reasonable time frame ion mechanisms.

ons that result in As and Mo attenuation anced and sufficient attenuation capacity is are be used as a stand-alone corrective dissolved As and/or Mo, or in combination

ure technology, but loss of reactivity over ding on the duration of the remedy. conducting a bench and/or pilot study, is uttenuation mechanisms and/or select the PRB wall.

ven technology where hydrogeologic factors conductivity, flow velocity, depth to iis is considered an active remedial he "pumps" driving the system. Careful oper species, which will include ry, plant uptake of constituents, and te the required number and placement of

dwater flow; however, treatment of and not the primary objective.

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

-		40 CFR 257.96(C)(1)	40 CFR 257.96(C)(1)	40 CFR 257.9
	Corrective Measure	Ease of Implementation	Potential Impacts	Time Requirement to I
	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 a 2 months). However, a thorough pre-design modeling, and/or bench- and/or pilot-testing parameters prior to design and construction c take up to 24 months. Once installed, the tin the treatment area may be relatively quick bu kinetics of each targeted constituent. The tin injected materials throughout the treatment a
	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 As and Mo. 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 trench- quickly (1 to 2 months). However, additiona installation, and permit approval may be requ- months. The initiation of the approach woul wastewater treatment infrastructure. Hydrau relatively quickly after startup of the extracti with respect to the time to achieve GWPS wi- better understand attenuation mechanisms fo
	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 mechanisms and capacity can be time-consu MNA is expected to be successful within a re closure. Engineering measures will be imple minimize potential impacts to the subsurface groundwater monitoring will be used to verif 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 re depending on the final location and configur- testing would be required to obtain design pa construction of the remedy, which may take time to achieve GWPS downgradient of the I quick.
	Phytoremediation / <i>TreeWells</i>	Reasonably implementable to moderate. Engineered approach has been proven effective, and specific depth zones can be targeted. Trees are installed as "tree wells" in a large diameter boring to get the roots deep enough to intercept impacted groundwater flow paths. Area must be clear of above and below- ground structures (i.e., power lines). The system, once established (approximately three growing seasons), is a self-maintaining, sustainable remedial system that has no external energy requirements and little maintenance (i.e., efforts normally associated with landscaping).	Minimal impacts are expected. In fact, there are several positive impacts expected, including enhanced aesthetics, wildlife habitat, and limited energy consumption.	The design phase will require some groundw of the TreeWell units, which may take up to of required units, the installation effort is exp Hydraulic capture/control is expected approx and system performance is expected to furthe
	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 accompli months), depending on the final location and design phase and additional aquifer and com which may take up to 24 months. Once inst constituents dissolved in groundwater is antii this approach does not treat the downgradien prevents migration from a source area, it will term and coupled with other approaches.

be accomplished relatively quickly (1 to sign investigation, geochemical ting will be required to obtain design ion of the corrective measure, which may e time required to achieve GWPS within k but depends on the attenuation process e time for complete distribution of the ent area is also variable.

enches can be accomplished relatively tional aquifer testing, system design and required, which may take up to 24 would be contingent on the start-up of the draulic containment can be achieved raction system, but uncertainty exists S without additional data collection to ns for As and Mo.

eady in place. Demonstrating attenuation onsuming and can take up to 24 months. n a reasonable time frame following pond mplemented during closure of AP-1 to face during closure activities and routine verify that groundwater impacts remain

ed relatively quickly (6 to 12 months), figuration. However, bench- and/or pilotgn parameters prior to design and take up to 24 months. Once installed, the the PRB is anticipated to be relatively

Indwater modeling for optimal placement p to 6 months. Depending on the number s expected to last several weeks. proximately three years after planting urther improve over time.

mplished relatively quickly (6 to 12 and configuration. However, some compatibility testing will be required, installed, preventing migration of anticipated to be relatively quick. Since dient area of impacted groundwater but t will likely have to be maintained long-

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

Corrective Measure	40 CFR 2: Institutional Requirements	57.96(C)(3) Other Env or Public Health Requirements	Relative O
Geochemical Approaches	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-1. 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 inject volume required per derive
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-1. 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 d treatment system, and volu
	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-1.	Low to me
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-1. 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) - minima not neces
Phytoremediation / <i>TreeWells</i>	Deed restrictions may be necessary for groundwater areas upgradient of the TreeWell system. 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-1. Following installation, the remedy is passive and does not require external energy.	Medium (for installation) - mi
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-1. 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 an complexity of above-grou

ve Costs
jection network required and injectate rived design parameters)
y duration, complexity of above-ground lume of water processed)
medium
mal O&M requirements if replacement is cessary
minimal O&M requirements
and depth of wall, remedy duration and round treatment system)

Geosyntec[▷]

Table 2Summary of ActivityPlant Hammond AP-1, Flyod 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 geochemical parameters (including Fe, Mn, DOC and other ligands) that may affect geochemical mechanisms.	HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, HGWC-13, MW-28D	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 arsenic (As) and molybdenum (Mo) in the aquifer solid matrix; x-ray diffraction (XRD) analysis for mineralogy; total As, Mo, 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-8, HGWC-10, MW-19	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, HGWC-7, HGWC-8 HGWC- 9, HGWC-10, HGWC-11, HGWC-12, HGWC-13, MW-5, MW-6, MW-7, MW-19, MW-20, MW-24D, MW-25D, MW- 26D, MW-27D, MW-28D, MW-29	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 As and Mo in the aquifer solid matrix; XRD analysis for mineralogy; total As, Mo, 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-7, HGWC-8 HGWC-9, HGWC-11, HGWC-12, HGWC-13, MW-28D	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.
Phytoremediation (<i>TreeWells</i> *)	Collected supplementary groundwater samples to evaluate in situ geochemical conditions and plant nutrient levels needed to establish phytoremediation measures (TreeWells®) downgradient of unit	HGWC-8, HGWC-10, MW-19, MW-20	Careful design will be needed to select the proper species, which will include consideration of groundwater chemistry, plant uptake of constituents, and groundwater flow modeling to evaluate the required number and placement of <i>TreeWell</i> [®] units.	 (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 <i>TreeWell</i>[®] units. (ii) Continue to conduct supplementary groundwater sampling events to evaluate seasonal fluctuations in groundwater chemistry and plant nutrient levels.
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-8, HGWC-10, MW-19	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-1, Floyd County, Georgia

Well ID:	HGWA-1	HGWA-2	HGWA-3	HGWC-7	HGWC-8	HGWC-9	HGWC-10	HGWC-11	HGWC-12	HGWC-13	MW-5 ⁽¹⁾
Sample Date:	9/23/2019	9/23/2019	9/23/2019	9/23/2019	9/24/2019	9/27/2019	9/27/2019	9/27/2019	9/27/2019	9/26/2019	9/25/2019
Parameter											
Alkalinity, Bicarbonate (CaCO ₃)	279	29.0	174	151	130	171	248	71.0	157	102	165
Alkalinity, Total as CaCO ₃	279	29.0	174	151	130	171	248	71.0	157	102	165
Dissolved Organic Carbon	1.1	2.1	ND	ND	ND (0.58 J)	ND	ND (0.63 J)	ND (0.92 J)	ND (0.76 J)	1.7	ND (0.57 J)
Iron	ND (0.022 J)	1.7	0.53	0.18	ND (0.037 J)	0.32	ND	ND	0.11	1.4	0.051
Magnesium	5.4	2.4	4.8	10.2	14.0	18.0	12.2	15.5	15.6	24.4	10.8
Manganese	0.20	1.1	0.21	0.31	0.18	0.43	2.1	0.017	1.9	3.7	ND (0.0042 J)
Orthophosphate as P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphorous	ND	ND	ND (0.026 J)	ND	ND (0.023 J)	ND	ND	ND	ND	ND (0.022 J)	ND
Potassium	0.33	0.88	0.42	2.8	6.9	3.2	1.7	2.5	7.5	5.0	ND (0.96 J)
Sodium	20.4	8.7	5.2	10.4	8.5	13.4	11.9	6.7	10.5	10.1	21.6
Sulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

-- = Parameter was not analyzed

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.

 Table 3a

 Summary of Groundwater Analytical Data - Geochemical Parameter Evaluation

 Plant Hammond AP-1, Floyd County, Georgia

Well ID:	MW-6 ⁽¹⁾	MW-7 ⁽¹⁾	MW-19 ⁽¹⁾	MW-20 ⁽¹⁾	MW-24D ⁽¹⁾	MW-25D ⁽¹⁾	MW-26D ⁽¹⁾	MW-27D ⁽¹⁾	MW-28D ⁽¹⁾	MW-29 ⁽¹⁾	MW-30D ⁽¹⁾
Sample Date:	9/26/2019	9/26/2019	9/27/2019	9/25/2019	9/26/2019	9/27/2019	9/26/2019	9/26/2019	9/26/2019	9/24/2019	9/24/2019
Parameter											
Alkalinity, Bicarbonate (CaCO ₃)	234	113	75.0	211	102	255	175	166	173	187	435
Alkalinity, Total as CaCO ₃	234	113	75.0	211	102	255	175	166	173	187	435
Dissolved Organic Carbon	ND (0.52 J)	ND	ND (0.79 J)	ND	ND	1.8	ND	ND	ND	ND	1.4
Iron	0.51	ND (0.037 J)	0.10	3.1	1.0	0.22	0.40	ND (0.015 J)	0.89	0.13	0.30
Magnesium	14.3	9.8	12.3	8.6	5.1	8.5	15.9	19.7	22.5	12.7	5.2
Manganese	0.55	0.070	3.2	0.17	0.72	0.040	0.17	0.058	0.12	1.4	0.044
Orthophosphate as P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphorous	ND (0.017 J)	ND	ND	0.083	ND (0.025 J)	ND (0.019 J)	ND	ND	ND	ND	
Potassium	1.2	ND (0.79 J)	3.6	ND (0.31 J)	ND (0.45 J)	ND (0.69 J)	2.0	ND (0.92 J)	ND (0.99 J)	1.2	3.3
Sodium	13.1	8.2	8.4	11.0	11.3	118	12.2	27.8	9.6	13.0	704
Sulfide	ND	ND	ND	ND	ND	0.49	ND	ND	ND	ND	0.80

Notes:

-- = Parameter was not analyzed

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.

Table 3bSummary of Groundwater Analytical Data - Agronomic Parameter EvaluationPlant Hammond AP-1, Floyd County, Georgia

Well ID:	HGWC-8	HGWC-10	MW-19 ⁽¹⁾	MW-20 ⁽¹⁾
Sample Date:	9/24/2019	9/27/2019	9/27/2019	9/25/2019
Parameter				
Nitrogen, Ammonia	2.6	ND	1.0	0.1
Copper	ND	ND	ND	ND
Nitrate as N	ND (0.012 J)	ND (0.029 J)	ND (0.039 J)	0.70
Nitrite as N	ND (0.028 J)	ND	ND (0.032 J)	ND
Total Dissolved Solids	486	626	420	455
Total Hardness as CaCO ₃ (SM 2340B)	300	501000	299000	337000
Zinc	ND (0.0032 J)	ND	ND (0.0055 J)	ND

Notes:

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

 $\ensuremath{\text{ND}}\xspace =$ Indicates the parameter was not detected above the analytical MDL

(1) Well is designated a delineation monitoring well.

Table 3c Summary of Groundwater Analytical Data - NPDES Compliance Evaluation Plant Hammond AP-1, Floyd County, Georgia

Well ID:	HGWC-8	HGWC-10	MW-19 ⁽¹⁾
Sample Date:	9/24/2019	9/27/2019	9/27/2019
Parameter			
Nitrogen, Ammonia	2.6	ND	1.0
BOD, 5 day	ND	ND	ND
Oil and Grease	ND	ND	ND
Mercury	ND	ND	ND
Residual Chlorine	ND	ND	ND
Total Kjeldahl Nitrogen	2.8	ND	1.2
Total Organic Nitrogen	ND	ND	ND
Total Suspended Solids	ND	ND	ND

Notes:

ND = Indicates the parameter was not detected above the analytical method detection limit (MDL)

NPDES = National Pollutant Discharge Elimination System

(1) Well is designated a delineation monitoring well.

Table 4Proposed ACM Supplementary Data Collection Tasks for First Semi-Annual Period 2020Plant Hammond AP-1, Flyod County, Georgia

Data Collection Event	Applicable CMs ⁽¹⁾	Applicability/Rationale	Field Component	Parameters of Interest (POI)	Analytical Lab Performing Analysis
Groundwater sampling	3, 4, 5	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.	<u>In addition to routine App III/IV parameters:</u> 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 arsenic (As) and molybdenum (Mo) to characterize As and Mo in the aquifer solid matrix; x-ray diffraction (XRD) analysis for mineralogy; total As, Mo, 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).	Sequential extraction procedure (SEP) for analysis of arsenic (As) and molybdenum (Mo) to characterize As and Mo in the aquifer solid matrix; x-ray diffraction (XRD) analysis for mineralogy; total As, Mo, 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, 6	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

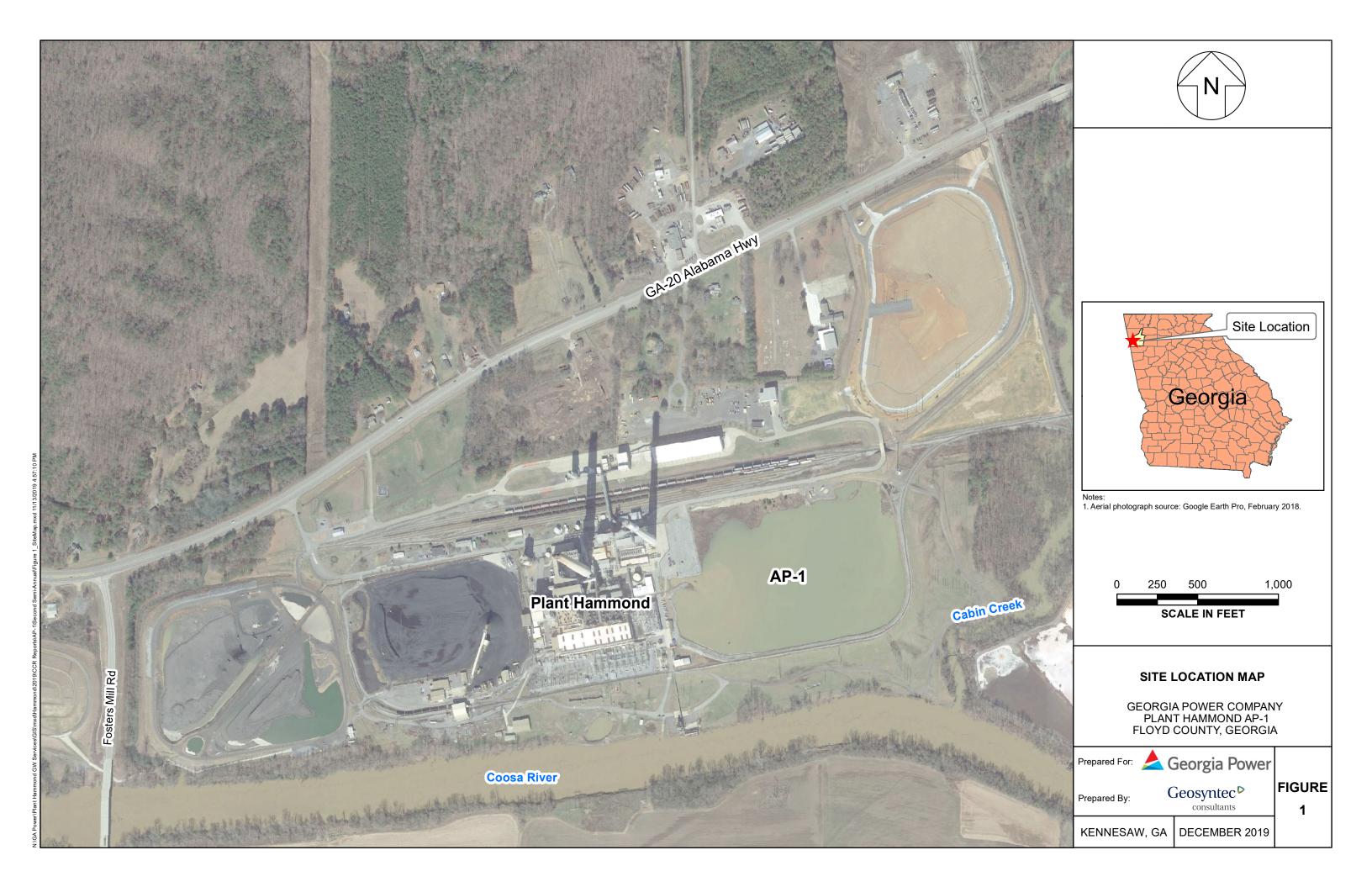
3 - Monitored Natural Attenuation (MNA)

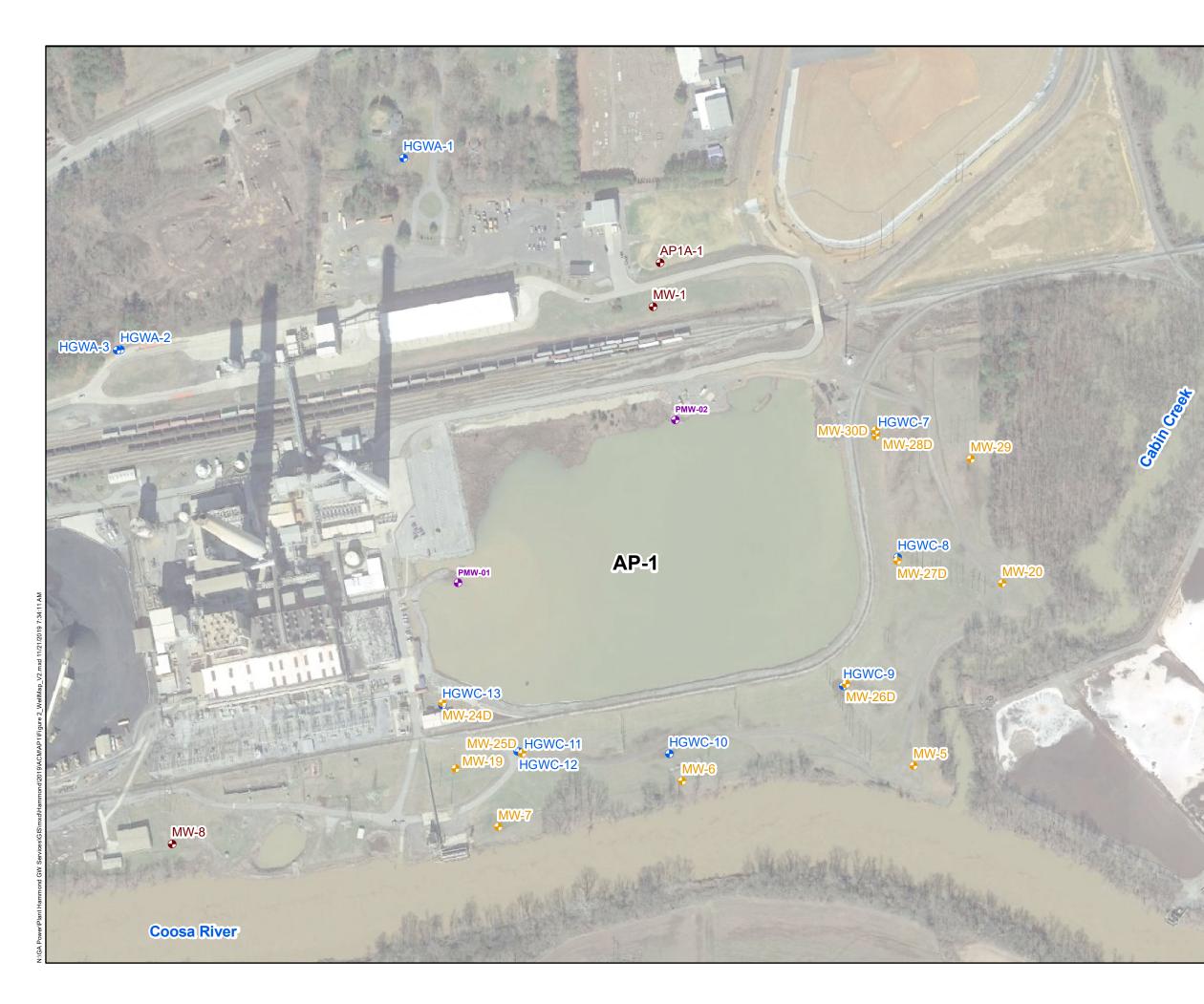
4 - Permeable Reactive Barrier (PRB)

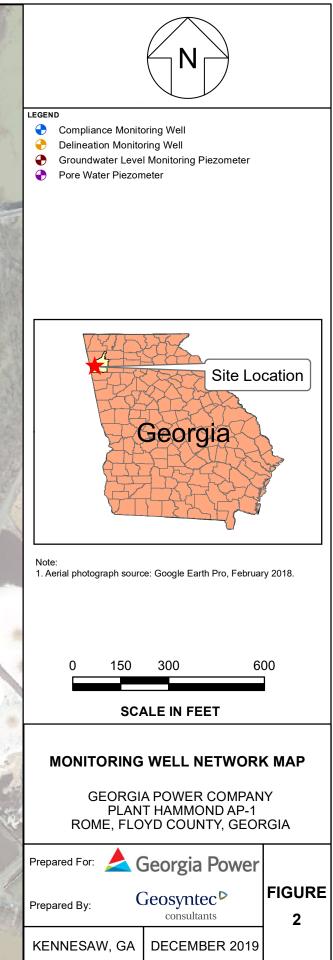
5 - Phytoremediation (TreeWells®)

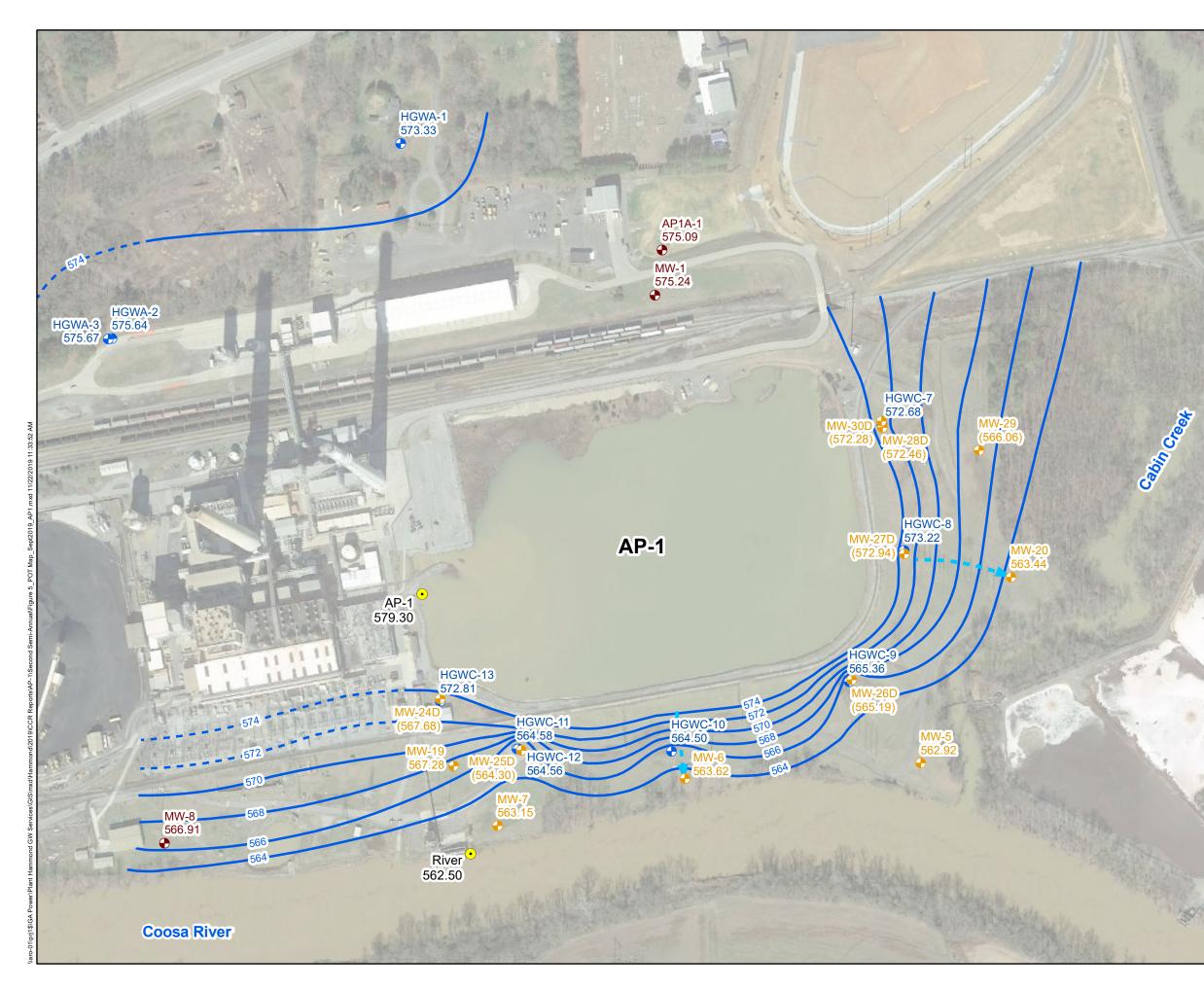
6 - Subsurface Vertical Barrier Walls

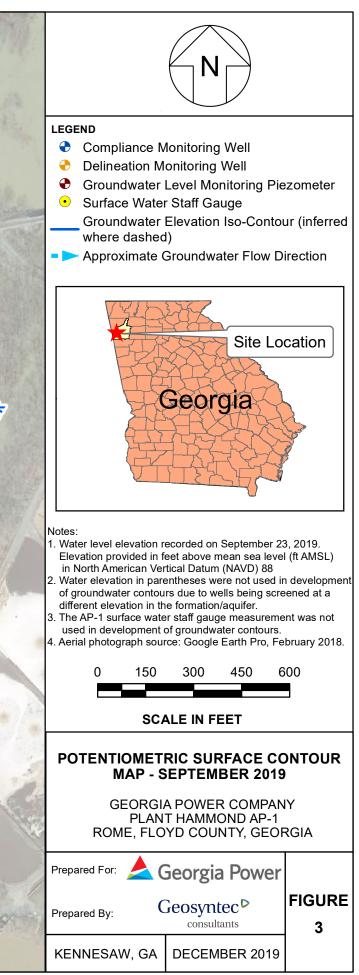
FIGURES











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,

Batery Mr Damil

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

Ormond Beach 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

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



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



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



ANALYTICAL RESULTS

Project: Plant Hammond GW6581

Pace Project No.: 2623499

Sample: HGWA-1	Lab ID:	2623499001	Collected	: 09/23/1	9 16:15	Received: 09/	24/19 15:23 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA	6010D Prepa	aration Me	thod: EF	PA 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 2	320B						
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 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 12:26		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-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 5	310B						
Dissolved Organic Carbon	1.1	mg/L	1.0	0.50	1		10/24/19 23:28		H3



ANALYTICAL RESULTS

Project: Plant Hammond GW6581

Pace Project No.: 2623499

Sample: HGWA-2	Lab ID:	2623499002	Collected	09/23/1	9 16:55	Received: 09/	24/19 15:23 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA	6010D Prepa	ration Me	thod: EF	PA 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 2	320B						
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 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 12:27		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-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 5	310B						
Dissolved Organic Carbon	2.1	mg/L	1.0	0.50	1		10/25/19 00:17		H3



ANALYTICAL RESULTS

Project: Plant Hammond GW6581

Pace Project No.: 2623499

Sample: HGWA-3	Lab ID:	2623499003	Collected	: 09/23/19	9 17:10	Received: 09/	24/19 15:23 N	latrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
	Analytical	Method: EPA 6	6010D Prepa	aration Me	thod: EF	PA 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 2	320B						
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 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 12:28	3	
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 09:25	5 18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/25/19 00:28	3	H3



QUALITY CONTROL DATA

Project: Plant Hammond GW6581

Pace Project No.: 2623499

OC Potob	272

QC Batch:	37339	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D MET
Associated Lab Sam	ples: 2623499001, 262349	9002, 2623499003	

Matrix: Water

METHOD BLANK: 168935	5		М
Associated Lab Samples	2623/00001	2623400002	2623400003

		Blank	Reporting			
Parameter	Units	Result	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
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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	

168938

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Pace Project No.:	Plant Hammond G 2623499	GW6581							
QC Batch:	35970		Analysis M	ethod:	SM 2320B				
QC Batch Method:	SM 2320B		Analysis De	escription:	2320B Alkalir	nity			
Associated Lab Sar	mples: 26234990	01, 2623499002,	2623499003						
METHOD BLANK:	161956		Matrix	x: Water					
Associated Lab Sar	mples: 26234990	01, 2623499002,	2623499003						
			Blank	Reporting					
Parar	meter	Units	Result	Limit	MDL		Analyz	ed	Qualifiers
Alkalinity, Total as C	CaCO3	mg/L).0	20.0	09/25/19	16.06	
, manney, rotar as c	54005	mg/∟	INL	20	.0	20.0	09/25/19	10.20	
		161957						10.20	
LABORATORY CO	NTROL SAMPLE:	161957	Spike	LCS	LCS	%	6 Rec		ifiers
LABORATORY CO	NTROL SAMPLE:	161957 Units	Spike Conc.	LCS Result	LCS % Rec	%	6 Rec Limits		ifiers
LABORATORY CO	NTROL SAMPLE:	161957	Spike	LCS	LCS	%	6 Rec		ifiers
LABORATORY CO	NTROL SAMPLE: meter CaCO3	161957 Units	Spike Conc.	LCS Result	LCS % Rec	%	6 Rec Limits		ifiers
LABORATORY CO Parar Alkalinity, Total as C	NTROL SAMPLE: meter CaCO3	161957 Units	Spike Conc.	LCS Result	LCS % Rec	%	6 Rec Limits		ifiers
LABORATORY CO Parar Alkalinity, Total as C SAMPLE DUPLICA	NTROL SAMPLE: meter CaCO3	161957 Units	Spike Conc. 100	LCS Result 101	LCS % Rec	%	6 Rec .imits 85-115	Qual	ifiers

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.



Project: Pace Project No.:	Plant Hammond GV 2623499	W6581										
QC Batch:	35930		Anal	ysis Metho	d:	SM 4500-P						
QC Batch Method:	SM 4500-P			, ysis Descri		4500PE Or	tho Phospl	horus				
Associated Lab San	nples: 262349900	1, 2623499002,	262349900)3								
METHOD BLANK:	161749			Matrix: W	/ater							
Associated Lab San	nples: 262349900	1, 2623499002,	262349900	03								
			Bla	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers	;	
Orthophosphate as	P	mg/L		ND	0.02	20	0.020 0	9/25/19 11:	:51			
LABORATORY COM	TROL SAMPLE:	161750										
			Spike	LC	S	LCS	% F	Rec				
Paran	neter	Units	Conc.	Re	sult	% Rec	Lim	its	Qualifiers			
Orthophosphate as	P	mg/L	0	.5	0.52	10	4	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DUPI	_ICATE: 1618	62		161863							
			MS	MSD								
		2623499001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Orthophosphate as	P mg/L	ND	0.5	0.5	0.52	0.52	103	103	80-120	0	10	

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



Project: Pace Project No.:	Plant Hammond GV 2623499	V6581										
QC Batch:	35996		Analy	ysis Metho	d.	SM 4500-S						
QC Batch Method:	SM 4500-S2 D			ysis Descri	ption:	4500S2D S	uifide vvai	er				
Associated Lab San	nples: 262349900	1, 2623499002,	262349900)3								
METHOD BLANK:	162154			Matrix: W	/ater							
Associated Lab San	nples: 262349900	1, 2623499002,	262349900)3								
			Blai		Reporting							
Paran	neter	Units	Res		Limit	MD	L	Analyzed	l Qi	ualifiers		
Sulfide		mg/L		ND	0.2	0	0.20)9/26/19 09	:18			
		162155										
		102100	Spike	LC	s	LCS	% F	Rec				
Paran	neter	Units	Conc.	Res	-	% Rec	Lin		Qualifiers			
Sulfide		mg/L	0	.5	0.45	9	0	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DUPL	ICATE: 1621	56		162157							
			MS	MSD								
		2623499001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	· Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.48	0.47	96	<u> </u>	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.



Project:	Plant Ha	mmond GW	6581										
Pace Project No.:	2623499												
QC Batch:	581439			Analy	sis Method	d:	SM 5310B						
QC Batch Method:	SM 531	0B		Analy	sis Descri	otion:	5310B Diss	olved Org	anic Carbon	1			
Associated Lab Sam	nples: 2	623499001	, 2623499002,	262349900	3								
METHOD BLANK:	3160596				Matrix: W	ater							
Associated Lab Sam	nples: 2	623499001	, 2623499002,	262349900	3								
				Blan		Reporting							
Param	neter		Units	Resu	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Dissolved Organic C	Carbon		mg/L		ND	1.	0	0.50 1	0/24/19 23:	00			
LABORATORY CON	NTROL SA	MPLE: 3	160597										
				Spike	LC	-	LCS	% F					
Param	neter		Units	Conc.	Res	ult	% Rec	Lim	nits (Qualifiers	_		
Dissolved Organic C	Carbon		mg/L	2	0	19.3	9	6	90-110				
MATRIX SPIKE & M	IATRIX SF		CATE: 3160	598		3160599)						
				MS	MSD								
			2624536004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dissolved Organic C	arbon	mg/L	ND	20	20	20.1	19.8	100	98	80-120	2	20	
MATRIX SPIKE & M	IATRIX SF		CATE: 3160	600		3160601							
				MS	MSD								
			2624536010	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual

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.



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.



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		

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

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			Attention: scsinvoices@southernco.com	
Profession Profes	ddress: 2480 Maner Road		Company Name:	T
Participant	lanta, GA 30339		Address:	Regulatory/Agency
Protections. Protections.<	southernco.com		Pace Quote:	
Полование Солона Сол	(404)506-7239 Fax:	Project Name: Plant Hammond	anager:	
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Phone:	(404)506-7239 Fax:	Project Name:	ď.	Plant Hammond	pu			Pa	Pace Project Manager:	ict Mana	1ger:	betsy	betsy.mcdaniel@pacelabs.com,	tiel @ pa	celabs.	com.						State//Location	ocation		
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Pace Analytical

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

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Section C Invoice Information	Attention:	Company Name:	Address:	Pace Quote:	Pace Project Manager:	Pace Profile #:			peniese		5				2	<u> </u>							BINE	04:6	823			Nool	3	
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	ĺ	ntec		775	7			COLLE	ац.	TIME	16((3	5						RELINGUISHED BY // AFFILLINGTO	who 6			SAMPLER	PRIN	SIGN	
tion:		Lauren Petty, Geosyntec		SCS10382775	Plant Hammond	GWCSBI			START		9/23/19 1				-							-	EV/16EE	Ver	Pare P				<u> </u>	J
Section B Required Project Information:	Joju Abraham	Petty		SC	lant H	3	$\left \right $			ò.	19/2				_		<u> </u>	Α_					SHED	6	-					
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Section B Required	port T	Copy To:		irchas	oject N	Project #:													\mathbb{N}					4	<u>v 1</u>			្ពុខ្ម		
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Section A Required Client Information:	Company:	Address:	~	Email:	Phone: (404)506-7239 Fax	lequeste	Γ		# W	эт	e	61	3	4	6	(6)	\mathcal{T}_{i}	8	6	[0]	111	(2				Pa	664CZ0Z · 40m	Due Due	1 8	
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Sar	mple Condition	Upon Receipt	WO#:262	23499	
			···· en	Due Dui I	
<i>Face Analytical</i> Client Name	GAlow	esc.C.R.	CLIENT: GAPower	Due Date: 10 -CCR	'01/19
Courier: Fed Ex UPS USPS Clier	nt Commercial	Pace Other	Optional Proj. Duell	Date:	
Custody Seal on Cooler/Box Present: Byes		intact: _ 🚽 yes [no Proj. Nam i		
Thermometer Used 214	Type of Ice: Wet	<u> </u>	Samples on ice, cooling	process has begun i	
Cooler Temperature 3,8C	Biological Tissue		Date and Initials	personyexamining	
Temp should be above freezing to 6°C	-	Comments:	contents: 9/	24/14/00	,
Chain of Custody Present:		1.			
Chain of Custody Filled Out:		2.			
Chain of Custody Relinquished:		3.			
Sampler Name & Signature on COC:	DARS DNO DN/A	4.			
Samples Arrived within Hold Time:		5.			
Short Hold Time Analysis (<72hr):		6			
Rush Turn Around Time Requested:		7.			
Sufficient Volume:		8.			
Correct Containers Used:		9.			
-Pace Containers Used:	Pres DNo DN/A				
Containers Intact:	Pres DNO DN/A	10.			
Filtered volume received for Dissolved tests	UYes DANO DATA	11.O-phos	+ VOC Fire	2 d filte	(el
Sample Labels match COC:		12.			
-Includes date/time/ID/Analysis Matrix:	<u> </u>				
All containers needing preservation have been checked.		13.			
All containers needing preservation are found to be in compliance with EPA recommendation.					
exceptions: VOA, coliform, toc. bac, WI-DRO (water)		Initial when completed	Lot # of added preservative		
Samples checked for dechlorination:	□Yes □No □N/A				
Headspace in VOA Vials (>6mm):					
Trip Blank Present:					
Trip Blank Custody Seals Present	□Yes □No □N/A				
Pace Trip Blank Lot # (if purchased):					
			Field Date Required?	Y / N	FI
Client Notification/ Resolution:	Data	Time:	Field Data Required?		
Person Contacted: Comments/ Resolution:			<u> </u>		
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Project Manager Review:	<u></u>		Date:		
Note: Whenever there is a discrepancy affecting North Certification Office (i.e out of hold, incorrect preservati	Carolina compliance sa ive, out of temp, incorrect	mples, a copy of this forr t containers)	n will be sent to the North (18 of 18

Page 1 F-ALLC003rev.3, 11September20	8 of	18
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Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

December 06, 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,

Kein Hung

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.: 2623556

Pace Analytical Services Atlanta

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

Pace Analytical Services Ormond Beach

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

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

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



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



SAMPLE ANALYTE COUNT

Project:Plant HammondPace 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-CI 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-CI 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



Project: Plant Hammond

Pace Project No.: 2623556

Sample: FB-01	Lab ID: 2	2623556001	Collecte	d: 09/24/1	9 17:25	Received: 09/	25/19 14:03 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
	Analytical N	/lethod: EPA	6010 Prepa	ration Meth	nod: 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			N2
Potassium	ND	mg/L	1.0	0.15	1	10/08/19 14:47			
Sodium	ND	mg/L	2.0	0.27	1	10/08/19 14:47		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 N	/lethod: EPA	6020B Prep	paration Me	thod: EF	PA 3005A			
Copper	ND	mg/L	0.025	0.00019	1	09/27/19 15:26	10/01/19 10:40		
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 N	/lethod: EPA	7470A Prep	aration Me	thod: EF	PA 7470A			
Mercury	ND	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 N	Nethod: EPA	1664B						
Oil and Grease	ND	mg/L	4.9	4.9	1		09/30/19 08:00		
2320B Alkalinity Low Level	Analytical M	/lethod: SM 2	320B						
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 N	/lethod: SM 2	540C						
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/01/19 16:32		
2540D Total Suspended Solids	Analytical M	/lethod: SM 2	540D						
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/27/19 16:27		
4500CL G Chlorine, Residual	Analytical M	/lethod: SM 4	500-CI 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 M	/lethod: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:54		
4500S2D Sulfide Water	Analytical M	/lethod: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:51	18496-25-8	
5210B BOD, 5 day	Analytical M	/lethod: SM 5	210B Prepa	aration Met	hod: 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 M	/lethod: TKN-	NH3 Calcula	ation					
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/02/19 12:32		

REPORT OF LABORATORY ANALYSIS



Project: Pla	ant Hammond
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Pace Project No.: 2623556

Sample: FB-01	Lab ID:	2623556001	Collected	d: 09/24/19	9 17:25	Received: 09/	/25/19 14:03 Ma	atrix: 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	В
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 Prepa	aration Meth	nod: EP	A 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 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 14:58		



Project: Plant Hammond

Pace Project No.: 2623556

Sample: EB-01	Lab ID: 2	2623556002	Collecte	d: 09/24/19	9 17:40	Received: 09/	25/19 14:03 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical M	lethod: EPA 6	6010 Prepa	ration Meth	od: EPA	3010			
Calcium	ND	mg/L	0.50	0.064	1	10/08/19 14:47	10/09/19 21:46	7440-70-2	
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		10/09/19 21:46		
Manganese	ND	mg/L	0.0050	0.00042	1	10/08/19 14:47			
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47			N2
Potassium	ND	mg/L	1.0	0.15	1	10/08/19 14:47			
Sodium Tot Hardness asCaCO3 (SM 2340B	ND ND	mg/L mg/L	2.0 3.2	0.27 0.51	1 1	10/08/19 14:47 10/08/19 14:47	10/09/19 21:46 10/09/19 21:46	7440-23-5	
6020B MET ICPMS	Analytical M	lethod: EPA 6	6020B Prep	aration Met	hod: EF	PA 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 M	lethod: EPA	7470A Prep	aration Met	hod: EF	PA 7470A			
Mercury	ND	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 M	lethod: EPA	1664B						
Oil and Grease	ND	mg/L	4.9	4.9	1		09/30/19 08:00		
2320B Alkalinity Low Level	Analytical M	lethod: SM 2	320B						
Alkalinity, Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/02/19 12:53		
Alkalinity, Total as CaCO3	ND Analytical M	mg/L	1.0	1.0	1		10/02/19 12:53		
2540C Total Dissolved Solids Total Dissolved Solids	ND	1ethod: SM 2	10.0	10.0	1		10/01/19 16:32		
		mg/L 1ethod: SM 2		10.0	I		10/01/19 10.32		
2540D Total Suspended Solids				5.0			00/07/40 40 07		
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/27/19 16:27		
4500CL G Chlorine, Residual	-	1ethod: SM 4							
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 M	1ethod: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:56		
4500S2D Sulfide Water	Analytical N	lethod: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:51	18496-25-8	
5210B BOD, 5 day	Analytical N	lethod: SM 5	210B Prepa	aration Meth	od: 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 N	lethod: TKN-	NH3 Calcula	ation					
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/02/19 12:32		

REPORT OF LABORATORY ANALYSIS



Project:	Plant Hammond
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Pace Project No.: 2623556

Sample: EB-01	Lab ID:	2623556002	Collected	d: 09/24/19	9 17:40	Received: 09/	/25/19 14:03 Ma	atrix: 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	В
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 Prepa	ration Meth	od: EP	A 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 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 15:37		



Project:	Plant Hammond											
Pace Project No.:	2623556											
QC Batch:	36152		Analy	/sis Metho	od:	EPA 7470A						
QC Batch Method:	EPA 7470A		Analy	/sis Descr	iption:	7470 Mercu	ury					
Associated Lab San	nples: 262355600	1, 2623556002										
METHOD BLANK:	163281			Matrix: W	/ater							
Associated Lab San	ples: 262355600	1, 2623556002										
			Blar	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	MD)L	Analyzed	d Qi	ualifiers		
Mercury		mg/L		ND	0.0005	50 0	.00014	10/01/19 12	::04			
LABORATORY COM	ITROL SAMPLE:	163282										
			Spike	LC	CS	LCS	%	Rec				
Paran	neter	Units	Conc.	Re	sult	% Rec	Li	mits	Qualifiers			
Mercury		mg/L	0.002	25	0.0021	8	3	80-120				
MATRIX SPIKE & N	ATRIX SPIKE DUPL	_ICATE: 1632	83		163284							
			MS	MSD								
		2623578001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0019	0.0021	7	77 83	3 75-125	8	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.



Project: Plant Hammond

Pace Project No.: 2623556

QC Batch: 5766	32	Analysis Meth	nod: E	PA 6010		
QC Batch Method: EPA	3010	Analysis Description:		010 MET		
Associated Lab Samples:	2623556001, 2623556002					
METHOD BLANK: 313374	13	Matrix:	Water			
Associated Lab Samples:	2623556001, 2623556002					
		Blank	Reporting			
Parameter	Units	Result	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	/I 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 N	12
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 S	PIKE DUPL	ICATE: 3133	745		3133746						
Parameter	Units	2623752004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD Qua
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

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



Project:	Plant Harr	nmond											
Pace Project No.:	2623556												
QC Batch:	36079			Anal	sis Metho	od: I	EPA 6020B						
QC Batch Method:	EPA 300	5A		Analy	ysis Descr	ription:	6020B MET	-					
Associated Lab Sar	nples: 26	623556001,	2623556002										
METHOD BLANK:	162814				Matrix: V	Vater							
Associated Lab Sar	nples: 26	623556001,	2623556002										
				Blai	nk	Reporting							
Parar	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Copper			mg/L		ND	0.02		.00019	09/30/19 19	-			
Zinc			mg/L		ND	0.01	0 (0.0015	09/30/19 19	:37			
LABORATORY CO	NTROL SAM	MPLE: 16	2815										
				Spike	L	CS	LCS	%	Rec				
Parar	neter		Units	Conc.	Re	sult	% Rec	Li	mits	Qualifiers			
Copper			mg/L	0	.1	0.098	9	8	80-120		_		
Zinc			mg/L	0	.1	0.10	10	1	80-120				
MATRIX SPIKE & M	IATRIX SPI		CATE: 1628	16		162817							
				MS	MSD								
			2623500001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Copper		mg/L	ND	0.1	0.1	0.099	0.094	ç	99 94	75-125	6	20	
Zinc		mg/L	0.0019J	0.1	0.1	0.10	0.097	ç	99 95	75-125	3	20	

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Project:Plant HammondPace Project No.:2623556							
QC Batch: 36120		Analysis M	ethod:	EPA 1664B			
QC Batch Method: EPA 1664B		Analysis De	escription:	1664 HEM, Oil	and Grease		
Associated Lab Samples: 2623556	6001, 2623556002						
METHOD BLANK: 163051		Matrix	k: Water				
Associated Lab Samples: 2623556	6001, 2623556002						
Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	d Qualifier	6
Oil and Grease	mg/L	NE	5	.0 .	5.0 09/30/19 08	3:00	
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						
		262355600	1 Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Oil and Grease	mg/L		ND 39.2	37.5	5 93	78-114	
SAMPLE DUPLICATE: 163053							
		2623453001	Dup		Max		
Parameter	Units	Result	Result	RPD	RPD	Qualifiers	
Oil and Grease	mg/L	ND) N	D	7	75	

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.



Project: Plant Hammond Pace Project No.: 2623556						
QC Batch: 36336		Analysis M	ethod:	SM 2320B		
QC Batch Method: SM 2320B		Analysis De	escription:	2320B Alkalini	ty, Low Level	
Associated Lab Samples: 2623556	6001, 2623556002					
METHOD BLANK: 164031		Matrix	x: Water			
Associated Lab Samples: 2623556	6001, 2623556002					
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyz	zed Qualifiers
Alkalinity, Total as CaCO3	mg/L	NE) 1	1.0	1.0 10/02/19	12:39
LABORATORY CONTROL SAMPLE:	164032	Spike	LCS	LCS	% Rec	
						12:39 Qualifiers
LABORATORY CONTROL SAMPLE: Parameter	164032	Spike	LCS	LCS	% Rec	
Alkalinity, Total as CaCO3	164032 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	
LABORATORY CONTROL SAMPLE: Parameter	164032 Units	Spike Conc. 50	LCS Result 48.0	LCS % Rec	% Rec Limits 85-115	
LABORATORY CONTROL SAMPLE: Parameter Alkalinity, Total as CaCO3 SAMPLE DUPLICATE: 164047	164032 Units mg/L	Spike Conc. 50 2623614004	LCS Result 48.0 Dup	LCS % Rec 96	% Rec Limits 85-115 Max	Qualifiers
LABORATORY CONTROL SAMPLE: Parameter Alkalinity, Total as CaCO3	164032 Units	Spike Conc. 50	LCS Result 48.0	LCS % Rec	% Rec Limits 85-115	

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.



Project: Pace Project No.:	Plant Hammond 2623556								
QC Batch:	36262		Analysis M	lethod:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	issolved Solids			
Associated Lab Sar	mples: 26235560	01, 2623556002							
LABORATORY CO	NTROL SAMPLE:	163778							
			Spike	LCS	LCS	% Rec			
Parar	meter	Units	Conc.	Result	% Rec	Limits	Qı	ualifiers	
Total Dissolved Soli	ids	mg/L	400	357	89	84-108			
SAMPLE DUPLICA	TE: 163780								
			2623620001	Dup		Max			
Parar	neter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Soli	ids	mg/L	14	6	139	5	10		
SAMPLE DUPLICA	TE: 163844								
			2623559001	Dup		Max			
Parar	meter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Soli	ids	mg/L	13	3	124	7	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.



•	ant Hammond 23556								
QC Batch:	36092		Analysis N	lethod:	SM 2540	2			
C Batch Method: SM 2540D			Analysis D	2540D To	tal Susp	ended Solid	S		
Associated Lab Sample	es: 26235560	001, 2623556002							
METHOD BLANK: 16	2876		Matr	ix: Water					
Associated Lab Sample	es: 26235560	001, 2623556002							
Paramete	er	Units	Blank Result	Reportin Limit	-	IDL	Analyz	zed	Qualifiers
Total Suspended Solids	3	mg/L	N	D	5.0	5.0	09/27/19	16:27	
LABORATORY CONT	ROL SAMPLE:	162877							
Paramete	ər	Units	Spike Conc.	LCS Result	LCS % Rec		% Rec Limits	Qua	lifiers
Total Suspended Solids	3	mg/L	100	100		100	90-110		
SAMPLE DUPLICATE:	162878								
			2623124002				Max		
Paramete	ər	Units	Result	Result	R	PD	RPD		Qualifiers
Total Suspended Solids	3	mg/L	30)7	318	4		10 H′	1
SAMPLE DUPLICATE:	162879								
			2623546003				Max		
Paramete	ər	Units	Result	Result	R	PD	RPD		Qualifiers
Total Suspended Solids	3	mg/L	34.	.0 ;;	34.0	0		10	

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



	Analysis M	lethod:	SM 4500-CI 0	3		
	-				otal Residual	
)01, 2623556002						
	Matri	x: Water				
)01, 2623556002						
	Blank	Reporting)			
Units	Result	Limit	MDL		Analyzed	Qualifiers
mg/L	N	 D	0.1	0.1 0	9/27/19 15:35	H6
162852						
	Spike	LCS				
Units	Conc.	Result	% Rec	Lim	nits Qua	lifiers
mg/L	1	1	100		86-116 H6	
	2623664001	Dup			Max	
Units	2623664001 Result	Dup Result	RPD		Max RPD	Qualifiers
	mg/L 162852 Units	Analysis D 201, 2623556002 001, 2623556002 Units Result mg/L NI 162852 Units Conc.	Matrix: Water 001, 2623556002 Units Blank Reporting Meg/L ND 162852 Units Conc. Result	Analysis Description: 4500CL G Ch 201, 2623556002 Matrix: Water 201, 2623556002 Units Result Limit MDL mg/L ND 0.1 162852 Units Conc. Result % Rec	Analysis Description: 4500CL G Chlorine, T 201, 2623556002 Matrix: Water 201, 2623556002 Blank Reporting Units Result Limit MDL mg/L ND 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	Analysis Description: 4500CL G Chlorine, Total Residual Matrix: Water 001, 2623556002 Matrix: Water 001, 2623556002 Matrix: Water 001, 2623556002 Blank Reporting Limit MDL Analyzed MDL Analyzed 0.1 0.1 09/27/19 15:35 162852 Units Conc. Result % Rec LCS % Rec

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.



Project: Plar	t Hammond											
Pace Project No.: 262	3556											
QC Batch: 36	006		Anal	ysis Metho	d:	SM 4500-P						
QC Batch Method: SN	1 4500-P		Anal	ysis Descri	ption:	4500PE Or	tho Phosp	horus				
Associated Lab Samples	: 262355600	1, 2623556002										
METHOD BLANK: 162	241			Matrix: W	/ater							
Associated Lab Samples	: 262355600	1, 2623556002										
			Bla	nk	Reporting							
Parameter		Units	Res	ult	Limit	MD	L	Analyzed	l Qi	ualifiers		
Orthophosphate as P		mg/L		ND	0.02	20	0.020 0	9/26/19 12	:53			
LABORATORY CONTRO	DL SAMPLE:	162242										
			Spike	LC	S	LCS	% F	Rec				
Parameter		Units	Conc.	Re	sult	% Rec	Lim	nits	Qualifiers			
Orthophosphate as P		mg/L	0	.5	0.51	10	2	80-120				
MATRIX SPIKE & MATR	IX SPIKE DUPL	ICATE: 1622	44		162243							
			MS	MSD								
		2623556001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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.



Project:	Plant Hammond											
Pace Project No.:	2623556											
QC Batch:	35996		Anal	ysis Metho	od:	SM 4500-S	2 D					
QC Batch Method:	QC Batch Method: SM 4500-S2 D			ysis Descr	iption:	4500S2D S	ulfide Wa	ater				
Associated Lab Sam	ples: 262355600	1, 2623556002										
METHOD BLANK:	162154			Matrix: V	Vater							
Associated Lab Sam	ples: 262355600	1, 2623556002										
			Blai	nk	Reporting							
Param	eter	Units	Res	ult	Limit	MD	L	Analyzed	d Qi	ualifiers		
Sulfide		mg/L		ND	0.2	0	0.20	09/26/19 09):18			
LABORATORY CON	TROL SAMPLE:	162155										
			Spike	L	CS	LCS	%	Rec				
Param	eter	Units	Conc.	Re	sult	% Rec	Li	mits	Qualifiers			
Sulfide		mg/L	0	.5	0.45	9	0	80-120				
MATRIX SPIKE & M	ATRIX SPIKE DUPL	ICATE: 1621	56		162157							
			MS	MSD								
		2623499001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.48	0.47	g	96 94	4 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.



Project: Plant Hammond									
Pace Project No.: 2623556									
QC Batch: 35994		Analysis M	ethod:	SM 5210B					
QC Batch Method: SM 5210B		Analysis D	escription:	5210B BOD, \$	5 day				
Associated Lab Samples: 26235560	001, 2623556002								
METHOD BLANK: 162151		Matri	x: Water						
Associated Lab Samples: 26235560	01, 2623556002								
		Blank	Reporting	g					
Parameter	Units	Result	Limit	MDL		Analyz	ed	Qualifiers	
BOD, 5 day	mg/L	NE)	2.0	2.0	10/01/19 (09:55	1A	
LABORATORY CONTROL SAMPLE:	162153								
	162153	Spike	LCS	LCS		6 Rec			
LABORATORY CONTROL SAMPLE: Parameter	162153 Units	Spike Conc.	LCS Result	LCS % Rec		6 Rec ₋imits	Qua	lifiers	
Parameter								lifiers	
Parameter	Units	Conc.	Result	% Rec		imits		lifiers	
LABORATORY CONTROL SAMPLE: Parameter BOD, 5 day SAMPLE DUPLICATE: 162313	Units	Conc. 198	Result 198	% Rec		Limits 85-115		lifiers	
Parameter BOD, 5 day SAMPLE DUPLICATE: 162313	Units mg/L	Conc. 198 2623577001	Result 198 Dup	% Rec 100		Limits 85-115 Max			
Parameter BOD, 5 day	Units	Conc. 198	Result 198	% Rec		Limits 85-115		lifiers	

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.



Project:	Plant H	lammond											
Pace Project No .:	26235	56											
QC Batch:	3599	0		Analy	sis Metho	od: I	EPA 300.0						
QC Batch Method:	atch Method: EPA 300.0			Analy	Analysis Description: 300.0 IC Anions								
Associated Lab Sar	nples:	262355600	1, 2623556002										
METHOD BLANK:	16213	3			Matrix: V	Vater							
Associated Lab Sar	nples:	262355600	1, 2623556002										
				Blar		Reporting							
Parar	neter		Units	Res	ult	Limit	MD	L	Analyzed	d Qu	ualifiers		
Nitrate as N			mg/L		ND	0.05			09/26/19 08				
Nitrite as N			mg/L		0.013J	0.05	0	0.011	09/26/19 08	:55			
LABORATORY COI	NTROL	SAMPLE:	162134										
				Spike	L	CS	LCS	%	Rec				
Paran	neter		Units	Conc.	Re	sult	% Rec	Lii	mits	Qualifiers			
Nitrate as N			mg/L	1	0	10.4	10	4	90-110		_		
Nitrite as N			mg/L	1	0	10.5	10	5	90-110				
MATRIX SPIKE & M	IATRIX	SPIKE DUPL	ICATE: 1621	35		162136							
				MS	MSD								
			2623556001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrate as N		mg/L	0.016J	10	10	-	10.1	10			1		
Nitrite as N		mg/L	0.021J	10	10	10.3	10.5	10	03 105	5 90-110	2	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.



Project: Plant Hamm	nond						
Pace Project No.: 2623556							
QC Batch: 36095		Analysis Me	thod:	EPA 350.1			
QC Batch Method: EPA 350.1	Analysis De	scription:	350.1 Ammonia				
Associated Lab Samples: 262	3556001, 2623556002						
METHOD BLANK: 162900		Matrix	: Water				
Associated Lab Samples: 262	3556001, 2623556002						
Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers	6
Nitrogen, Ammonia	mg/L	ND	0.1	0 0.1	0 09/30/19 10:*	18	
LABORATORY CONTROL SAM	PLE: 162901						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits C	Qualifiers	
Nitrogen, Ammonia	mg/L	10	10.3	103	90-110		
MATRIX SPIKE SAMPLE:	162902						
		2623600001	•	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Nitrogen, Ammonia	mg/L	I	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 N	11

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

REPORT OF LABORATORY ANALYSIS



- ,	Plant Hammond 2623556							
QC Batch:	36141		Analysis M	ethod:	EPA 351.2			
QC Batch Method:	QC Batch Method: EPA 351.2			escription:	351.2 TKN			
Associated Lab Samp	oles: 26235560	001, 2623556002						
METHOD BLANK: 1	163259		Matri	x: Water				
Associated Lab Samp	oles: 26235560	01, 2623556002						
Parame	eter	Units	Blank Result	Reporting Limit	MDL	Analyz	ed Qua	alifiers
Nitrogen, Kjeldahl, To	tal	mg/L	N	0.4	40	0.40 10/01/19	11:44	
LABORATORY CONT	TROL SAMPLE:	163260						
Parame	eter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
Nitrogen, Kjeldahl, To	tal	mg/L	10	9.6	96	90-110		
MATRIX SPIKE SAM	PLE:	163261						
			262355600		MS	MS	% Rec	
Parame	eter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Nitrogen, Kjeldahl, To	tal	mg/L		ND 10	8	.8 8	38 90- ⁻	110 M1
MATRIX SPIKE SAM	PLE:	163262						
Dresser		l la ita	262364900		MS	MS % Data	% Rec	
Parame Nitrogen, Kjeldahl, To		Units mg/L	Result	Conc. 25.8 10	Result 35	% Rec	Limits	Qualifiers
Theogen, recould i, io		iiig/L		-0.0 10			,0 30-	

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



Project:	Plant H	ammond											
Pace Project No.:	262355	6											
QC Batch:	57463	34		Analy	sis Metho	d: :c	SM 5310B						
QC Batch Method:	SM 5	310B		Analy	Analysis Description: 5310B Dissolved Organic Carbon								
Associated Lab Sam	ssociated Lab Samples: 2623556001, 262355600												
METHOD BLANK:	312243	6			Matrix: W	ater							
Associated Lab Sam	ples:	2623556001	1, 2623556002										
				Blar		Reporting							
Parame	eter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Dissolved Organic Ca	arbon		mg/L		ND	1.	0	0.50	10/01/19 14::	32			
LABORATORY CON	TROLS	SAMPLE: 3	3122437										
				Spike	LC	-	LCS		Rec				
Parame	eter		Units	Conc.	Res	sult	% Rec	_ Lin	nits C	Qualifiers			
Dissolved Organic Ca	arbon		mg/L	2	20	18.6	9:	3	90-110				
MATRIX SPIKE & MA	ATRIX		ICATE: 3122	438		3122439)						
				MS	MSD								
			2623556001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	• •
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dissolved Organic Ca	arbon	mg/L	ND	20	20	19.6	19.5	90	6 95	80-120	1	20	
MATRIX SPIKE & MA	ATRIX		ICATE: 3122	440		3122441							
				MS	MSD								
			2623635001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dissolved Organic Ca													

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



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.



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

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

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Requin	lient Information:	Required Project Information:			n'	oice Inf	Invoice Information:	ï										_	Page		-	ō	-	
Company:	Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham			Att	ention:	scsin	Ivoices	scsinvoices @ southernco.com	100.00	E				ĺ	Г					1	ľ		
Address:	2480 Maner Road	Copy To: Lauren Petty, Geosyntec	osyntec		8	Company Name:	Vame:									-								
Allanta,	GA 30339				Ρ¥.	Address:										1 and	100			Recutations An				535333
Email:	jabraham@southernco.com	Purchase Order #: SCS10382775	382775		Pa	Pace Quote:																		
Phone:	(404)506-7239 Fax	Project Name: Plant Hammond	puor		<u>a</u>	Se Proje	Ĕ	ıger:	betsy.n	ncdanie	betsy.mcdaniel@pacelabs.com,	elabs.c	ощ,						1	NOT	State//Lockhon			
Saupar	Hednested the bale: Stan Aard TAI	Project #: CNC201			Ba	Pace Profile #:		327 (AP)		ſ	to dela minima della				1.00 A		and the second		1	G	GA			
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	Sample Conditi		
Face Analytical Client Nan	ne: GLA	Power	Project #
Courier: Fed Ex UPS USPS C C Tracking #:	lient 🗌 Commerci	ial Pace Othe	MO#: 2623556
Custody Seal on Cooler/Box Present:	, es □ no Se	eals intact:	
Packing Material: Bubble Wrap			
Thermometer Used 83		e Dinei	Samples on ice, cooling process has begun
Cooler Temperature	-	sue is Frozen: Yes	Date and Initials of person examining
Temp should be above freezing to 6°C	•	Comments:	contents: <u>9/25/19</u> M
Chain of Custody Present:	Tres DNO D	IN/A 1.	
Chain of Custody Filled Out:	Pres DNo D	IN/A 2.	
Chain of Custody Relinquished:	Dres ONO O	IN/A 3.	
Sampler Name & Signature on COC:	-ElYes DNo D	IN/A 4.	
Samples Arrived within Hold Time:	ATTES DNO D	IN/A 5.	
Short Hold Time Analysis (<72hr):	Pres DNo D	IN/A 6.	
Rush Turn Around Time Requested:	Yes Ho	IN/A 7.	
Sufficient Volume:	- Eres Ono O	IN/A 8.	
Correct Containers Used:	- Erres Ono O	IN/A 9.	
-Pace Containers Used:	TYes No	In/A	
Containers Intact:	Yes No	IN/A 10,	
Filtered volume received for Dissolved tests	-EYes No)N/A 11.	
Sample Labels match COC:]N/A 12.	
-Includes date/time/ID/Analysis Matrix:			
All containers needing preservation have been checked.]N/A 13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	n <u>⊡Yes</u> ⊡No ⊡]n/A	
exceptions: VOA, coliform, TOC, DCG, WI-DRO (water)		Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	□Yes □No 🗗	JN/A 14.	
Headspace in VOA Vials (>6mm):	□Yes □No -E		
Trip Blank Present:	□Yes □No 🔎	HNTA 16.	
Trip Blank Custody Seals Present	🗆 Yes 🖾 No 🞜	14/4	
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Resolution:			Field Data Required? Y / N
Person Contacted:	D	ate/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

December 06, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2623568

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,

Kein Hung

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.: 2623568

Pace Analytical Services Atlanta

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

Pace Analytical Services Ormond Beach

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

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

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



SAMPLE SUMMARY

Project: Plant Hammond

Pace Project No.: 2623568

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623568001	HGWC-8	Water	09/24/19 15:50	09/25/19 14:03
2623568002	MW-29	Water	09/24/19 15:22	09/25/19 14:03
2623568003	MW-30d	Water	09/24/19 16:40	09/25/19 14:03



SAMPLE ANALYTE COUNT

Project:Plant HammondPace Project No.:2623568

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623568001	HGWC-8	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-CI 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
2623568002	MW-29	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
2623568003	MW-30d	EPA 6020B	CSW	5	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



Project: Plant Hammond

Pace Project No.: 2623568

Sample: HGWC-8	Lab ID:	2623568001	Collected	: 09/24/1	9 15:50	Received: 09/	25/19 14:03 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical I	Method: EPA	6010D Prepa	aration Me	thod: EF	PA 3010A			
Iron	0.037J	mg/L	0.040	0.015	1	11/12/19 18:23	11/13/19 18:51	7439-89-6	
Magnesium	14.0	mg/L	0.050	0.011	1	11/12/19 18:23	11/13/19 18:51		
Manganese	0.18	mg/L	0.040	0.0061	1	11/12/19 18:23			
Phosphorus	0.023J	mg/L	0.050	0.023	1	11/12/19 18:23			
Potassium Sodium	6.9 8.5	mg/L	0.20 5.0	0.026 0.93	1 5	11/12/19 18:23 11/12/19 18:23	11/13/19 18:51 11/14/19 17:05		Е
Total Hardness by 2340B	300	mg/L mg/L	5.0 2.7	0.93	5 1	11/12/19 18:23	11/13/19 18:51	7440-23-5	E
6020B MET ICPMS		Method: EPA					11/10/10 10:01		
Copper	ND	mg/L	0.025	0.00019	1	09/27/19 15:26	10/01/19 12:07	7440-50-8	
Zinc	0.0032J	mg/L	0.010	0.0015	1	09/27/19 15:26	10/01/19 12:07		
7470 Mercury	Analytical I	Method: EPA	7470A Prepa	ration Met	hod: EP	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	09/30/19 10:50	10/01/19 12:50	7439-97-6	
HEM, Oil and Grease	Analytical I	Method: EPA	1664B						
Oil and Grease	ND	mg/L	4.9	4.9	1		09/30/19 14:45		
2320B Alkalinity	Analytical I	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	130	mg/L	20.0	20.0	1		09/30/19 17:13		
Alkalinity, Total as CaCO3	130	mg/L	20.0	20.0	1		09/30/19 17:13		
2540C Total Dissolved Solids	Analytical I	Method: SM 2	540C						
Total Dissolved Solids	486	mg/L	10.0	10.0	1		10/01/19 16:36		
2540D Total Suspended Solids	Analytical I	Method: SM 2	540D						
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/27/19 16:28		
4500CL G Chlorine, Residual	Analytical I	Method: SM 4	500-CI 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 I	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:57		
4500S2D Sulfide Water	Analytical I	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 11:06	18496-25-8	
5210B BOD, 5 day	Analytical I	Method: SM 5	210B Prepai	ation Meth	nod: SM	5210B			
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/26/19 09:30	10/01/19 10:04		1A
Total Organic Nitrogen Calc.	Analytical I	Method: TKN-	NH3 Calculat	tion					
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/02/19 12:32		



Project: Plant Hammond

Pace Project No.: 2623568

Sample: HGWC-8	Lab ID:	2623568001	Collected	Collected: 09/24/19 15:50			/25/19 14:03 Ma	atrix: 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	0.012J	mg/L	0.050	0.0050	1		09/26/19 12:22	14797-55-8			
Nitrite as N	0.028J	mg/L	0.050	0.011	1		09/26/19 12:22	14797-65-0	В		
350.1 Ammonia	Analytical	Method: EPA	350.1								
Nitrogen, Ammonia	2.6	mg/L	0.10	0.10	1		09/30/19 10:35	7664-41-7			
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA	351.2 Prepa	ration Meth	nod: EP	A 351.2					
Nitrogen, Kjeldahl, Total	2.8	mg/L	0.40	0.40	1	09/27/19 09:15	09/27/19 12:38	7727-37-9			
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B								
Dissolved Organic Carbon	0.58J	mg/L	1.0	0.50	1		10/01/19 17:37				



Project: Pla	ant Hammond
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Pace Project No.: 2623568

Sample: MW-29	Lab ID:	2623568002	Collected	09/24/19	9 15:22	Received: 09/	25/19 14:03 N	latrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA	6010D Prepa	ration Met	hod: EF	PA 3010A			
Iron	0.13	mg/L	0.040	0.015	1	11/12/19 18:23	11/13/19 19:11	7439-89-6	
Magnesium	12.7	mg/L	0.050	0.011	1	11/12/19 18:23	11/13/19 19:11	7439-95-4	
Manganese	1.4	mg/L	0.040	0.0061	1	11/12/19 18:23	11/13/19 19:11	7439-96-5	
Phosphorus	ND	mg/L	0.050	0.023	1	11/12/19 18:23	11/13/19 19:11	7723-14-0	
Potassium	1.2	mg/L	0.20	0.026	1	11/12/19 18:23	11/13/19 19:11	7440-09-7	
Sodium	13.0	mg/L	10.0	1.9	10	11/12/19 18:23	11/14/19 17:10	7440-23-5	E
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity, Bicarbonate (CaCO3)	187	mg/L	20.0	20.0	1		09/30/19 17:18	3	
Alkalinity, Total as CaCO3	187	mg/L	20.0	20.0	1		09/30/19 17:18	3	
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:58	3	
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 11:08	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 17:54	Ļ	



Project: Plant Hammond

Pace Project No.: 2623568

Sample: MW-30d	Lab ID:	2623568003	Collecte	d: 09/24/19	9 16:40	Received: 09/	25/19 14:03 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Prep	paration Met	hod: EF	PA 3005A			
Iron	0.30	mg/L	0.040	0.0097	1	09/28/19 14:58	10/02/19 19:34	7439-89-6	
Magnesium	5.2	mg/L	0.050	0.0030	1	09/28/19 14:58	10/02/19 19:34	7439-95-4	
Manganese	0.044	mg/L	0.010	0.00057	1	09/28/19 14:58	10/02/19 19:34	7439-96-5	
Potassium	3.3	mg/L	0.10	0.026	1	09/28/19 14:58	10/02/19 19:34	7440-09-7	
Sodium	704	mg/L	5.0	0.75	50	09/28/19 14:58	10/02/19 19:40	7440-23-5	E
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	435	mg/L	20.0	20.0	1		09/30/19 17:22		
Alkalinity, Total as CaCO3	435	mg/L	20.0	20.0	1		09/30/19 17:22		
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:59		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	0.80	mg/L	0.20	0.20	1		09/26/19 11:12	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	1.4	mg/L	1.0	0.50	1		10/01/19 18:10		



Project:	Plant Hammond											
Pace Project No.:	2623568											
QC Batch:	36152		Analy	sis Metho	d: E	EPA 7470A						
QC Batch Method:	EPA 7470A		Analy	sis Descri	ption: 7	7470 Mercu	ıry					
Associated Lab Sar	mples: 262356800	01										
METHOD BLANK:	163281			Matrix: W	/ater							
Associated Lab Sar	mples: 262356800	01										
Parar	meter	Units	Blan Resi		Reporting Limit	MD	1	Analyze	4 0	ualifiers		
Mercury		mg/L			0.0005		.00014	10/01/19 12			·	
		0										
·												
LABORATORY CO	NTROL SAMPLE:	163282										
			Spike	LC	-	LCS		Rec				
LABORATORY CO		163282 Units	Spike Conc.	LC Res	-	LCS % Rec		Rec imits	Qualifiers			
			•	Res	-		Li		Qualifiers	_		
Parar		Units mg/L	Conc0.002	Res	0.0021	% Rec	Li	imits	Qualifiers			
Parar	neter	Units mg/L	Conc0.002	Res	sult	% Rec	Li	imits	Qualifiers	_		
Parar	neter	Units mg/L	Conc. 0.002	Res	0.0021	% Rec	Li	imits	Qualifiers % Rec		Мах	
Parar	neter MATRIX SPIKE DUP	Units mg/L LICATE: 1632 2623578001	- Conc. 0.002 83 MS	5 MSD	0.0021 163284	% Rec 8	Li	imits 80-120 MSD		RPD	Max RPD	Qual

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.



Project: Pl	ant Hammond
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Pace Project No.: 2623568

QC Batch: 3870	Batch: 38701		nod: E	PA 6010D		
QC Batch Method: EPA	C Batch Method: EPA 3010A		cription: 6	010D MET		
Associated Lab Samples:	2623568001, 2623568002					
METHOD BLANK: 17578	2	Matrix:	Water			
Associated Lab Samples:	2623568001, 2623568002					
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.015	11/13/19 18:41	
Magnesium	mg/L	ND	0.050	0.011	11/13/19 18:41	
Manganese	mg/L	ND	0.040	0.0061	11/13/19 18:41	
Phosphorus	mg/L	ND	0.050	0.023	11/13/19 18:41	
Potassium	mg/L	ND	0.20	0.026	11/13/19 18:41	
Sodium	mg/L	ND	1.0	0.19	11/13/19 18:41	
Total Hardness by 2340B	mg/L	ND	2.7	0.40	11/13/19 18:41	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	0.98	98	80-120	
Magnesium	mg/L	1	0.99	99	80-120	
Manganese	mg/L	1	0.98	98	80-120	
Phosphorus	mg/L	1	0.96	96	80-120	
Potassium	mg/L	1	0.97	97	80-120	
Sodium	mg/L	1	0.96J	96	80-120	
Total Hardness by 2340B	mg/L	6.6	6.5	99	80-120	

MATRIX SPIKE & MATRIX SI	PIKE DUPL	ICATE: 1757	84		175785							
			MS	MSD								
		2623568001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Iron	mg/L	0.037J	1	1	1.0	0.99	96	95	75-125	1	20	
Magnesium	mg/L	14.0	1	1	15.0	15.0	104	102	75-125	0	20	
Manganese	mg/L	0.18	1	1	1.2	1.1	97	94	75-125	2	20	
Phosphorus	mg/L	0.023J	1	1	0.99	0.98	97	96	75-125	1	20	
Potassium	mg/L	6.9	1	1	8.0	8.0	116	111	75-125	1	20	
Sodium	mg/L	8.5	1	1	9.4	9.3	90	85	75-125	0	20	
Total Hardness by 2340B	mg/L	300	6.6	6.6	311	310	166	143	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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	nt Hammond											
Pace Project No.: 262	3568											
QC Batch: 36	079		Anal	sis Metho	od: I	EPA 6020B						
QC Batch Method: EF	PA 3005A		Anal	/sis Descr	iption: 6	6020B MET						
Associated Lab Samples	: 2623568001											
METHOD BLANK: 162	814			Matrix: W	/ater							
Associated Lab Samples	: 2623568001											
			Blai	nk	Reporting							
Parameter		Units	Res	ult	Limit	MD	L	Analyzed	l Qı	ualifiers		
Copper		mg/L		ND	0.02	5 0.	00019	09/30/19 19	:37			
Zinc		mg/L		ND	0.01	0 (0.0015	09/30/19 19	:37			
LABORATORY CONTRO		62815										
LABORATORT CONTRO	JE SAIVIFLE.	02015	Spike	10	cs	LCS	%	Rec				
Parameter		Units	Conc.		sult	% Rec		mits	Qualifiers			
Copper		mg/L	0	1	0.098	0				_		
Zinc		IIIQ/L	0		0.098	9	8	80-120				
		mg/L	0		0.098	98 10		80-120 80-120				
		mg/L	0		0.10							
MATRIX SPIKE & MATR	IX SPIKE DUPL	mg/L	0									
	IX SPIKE DUPL	mg/L	0	.1	0.10				% Rec		Мах	
	IX SPIKE DUPL Units	mg/L	0 16 MS	.1 MSD	0.10	10	1	80-120	% Rec Limits	RPD	Max RPD	Qual
MATRIX SPIKE & MATR		mg/L ICATE: 1628 2623500001	0 16 MS Spike	.1 MSD Spike	0.10 162817 MS	10 MSD	1 MS	80-120 MSD % Rec	Limits	RPD 6	RPD	Qual

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.



Project:	Plant Hammond											
Pace Project No.:	2623568											
QC Batch:	36136		Analy	sis Metho	d: E	EPA 6020B						
QC Batch Method:	EPA 3005A		Analy	sis Descri	ption: 6	6020B MET	-					
Associated Lab Sar	mples: 262356800)3										
METHOD BLANK:	163251			Matrix: W	ater							
Associated Lab Sar	mples: 262356800)3										
Doro	meter	Units	Blar Resi		Reporting Limit	MD		Apolyzo	4 0	ualifiers		
	meter				-			Analyzed		uaimers		
Manganese		mg/L		ND	0.010	0.	00057	10/02/19 18	3:26			
LABORATORY CO	NTROL SAMPLE:	163252										
LABORATORY CO	NTROL SAMPLE:	163252	Spike	LC	s	LCS	%	Rec				
	NTROL SAMPLE:	163252 Units	Spike Conc.	LC Res	-	LCS % Rec		Rec mits	Qualifiers			
				Res	-		Li		Qualifiers			
Parar Manganese		Units mg/L	Conc0.	Res	sult	% Rec	Li	mits	Qualifiers			
Parar Manganese	meter	Units mg/L	Conc0.	Res	0.097	% Rec	Li	mits	Qualifiers			
Parar Manganese	meter	Units mg/L	Conc. 0. 53	Res	0.097	% Rec	Li	mits	Qualifiers	_	Max	
Parar Manganese	MATRIX SPIKE DUP	Units mg/L LICATE: 1632	Conc. 0. 53 MS	Res 1 MSD	0.097 163254	% Rec 9	Li	MSD		RPD	Max RPD	Qual

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.



Project:	Plant Hammond									
Pace Project No.:	2623568									
QC Batch:	36140		Analysis M	/lethod	: E	EPA 1664B				
QC Batch Method:	EPA 1664B		Analysis D	Descrip	tion: 1	664 HEM, Oil a	and Grease			
Associated Lab Sam	nples: 26235680	001								
METHOD BLANK:	163255		Matr	ix: Wa	ater					
Associated Lab Sam	nples: 26235680	001								
_			Blank	F	Reporting					
Parameter Units		Result		Limit	MDL	Analyz	zed	Qualifie	ers	
Dil and Grease mg/L		mg/L	Ν	D	5.0	0 5	.0 09/30/19	14:45		
	NTROL SAMPLE:	163256								
			Spike	LC	S	LCS	% Rec			
Param	neter	Units	Conc.	Res	ult	% Rec	Limits	Qua	lifiers	
Oil and Grease		mg/L	40		39.5	99	78-114			
MATRIX SPIKE SAM	MPLE:	163257								
			262346300	01	Spike	MS	MS		% Rec	
Param	neter	Units	Result		Conc.	Result	% Rec		Limits	Qualifiers
Oil and Grease		mg/L		ND	44.4	10.2		16	78-114	M3
SAMPLE DUPLICAT	TE: 163258									
-			2623464002	2	Dup		Max			
Param	neter	Units	Result		Result	RPD	RPD		Qualifiers	
						_				

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Project: Pace Project No.:	Plant Hammond 2623568								
QC Batch:	36180		Analysis M	ethod:	SM 2320B				
QC Batch Method:	SM 2320B		Analysis D	escription:	2320B Alkali	nity			
Associated Lab Sar	nples: 26235680	001, 2623568002, 2	623568003						
METHOD BLANK:	163383		Matri	x: Water					
Associated Lab Sar	nples: 26235680	001, 2623568002, 2	623568003						
			Blank	Reporting					
Parar	neter	Units	Result	Limit	MDL		Analyz	ed	Qualifiers
Alkalinity, Total as C	CaCO3	mg/L	NE	2	0.0	20.0	09/30/19	14:21	
LABORATORY CO	NTROL SAMPLE:	163384							
			Spike	LCS	LCS		6 Rec		
Parar	neter	Units	Conc.	Result	% Rec	L	_imits	Qua	lifiers
Alkalinity, Total as C	CaCO3	mg/L	100	100	100		85-115		
SAMPLE DUPLICA	TE: 163385								
			2623563001	Dup			Max		
Parar	neter	Units	Result	Result	RPD		RPD		Qualifiers
Alkalinity, Total as C	CaCO3	mg/L	177	7 1	74	2		10	

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Project: Pace Project No.:	Plant Hammond 2623568								
QC Batch:	36262		Analysis N	lethod:	SM 2540C				
QC Batch Method:	SM 2540C		-	escription:	2540C Total D	issolved Solids			
Associated Lab Sat	mples: 262356800)1							
LABORATORY CO	NTROL SAMPLE:	163778							
_			Spike	LCS	LCS	% Rec	-		
Para	meter	Units	Conc	Result	% Rec	Limits	Q(ualifiers	
Total Dissolved Sol	ids	mg/L	400	357	89	84-108			
SAMPLE DUPLICA	TE: 163780								
			2623620001			Max			
Para	meter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Sol	ids	mg/L	14	.6 1	139	5	10		
SAMPLE DUPLICA	TE: 163844								
			2623559001	Dup		Max			
Para	meter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Sol	ids	mg/L	13	3 1	24	7	10		

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Project: Plant Hammond						
Pace Project No.: 2623568						
QC Batch: 36092		Analysis M	ethod:	SM 2540D		
QC Batch Method: SM 2540D		Analysis D	escription:	2540D Total S	uspended Solid	S
Associated Lab Samples: 26235680	01					
METHOD BLANK: 162876		Matri	x: Water			
Associated Lab Samples: 26235680	01					
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyz	ed Qualifiers
Total Suspended Solids	mg/L	N	5 5	.0	5.0 09/27/19	16:27
LABORATORY CONTROL SAMPLE:	162877					
LABORATORY CONTROL SAMPLE:	162877	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Total Suspended Solids	mg/L	100	100	100	90-110	
SAMPLE DUPLICATE: 162878						
		2623124002	Dup		Max	
Parameter	Units	2623124002 Result	Dup Result	RPD	Max RPD	Qualifiers
Parameter	Units mg/L		Result			Qualifiers 10 H1
Parameter Total Suspended Solids		Result	Result		RPD	
Parameter Total Suspended Solids		Result	Result		RPD	
Parameter Total Suspended Solids		Result 30	Result 7 31		4 RPD	

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Project: Plant Hammond						
Pace Project No.: 2623568						
QC Batch: 36088		Analysis N	lethod:	SM 4500-CI G	;	
QC Batch Method: SM 4500-Cl G		Analysis D	escription:	4500CL G Ch	lorine, Total Res	idual
Associated Lab Samples: 26235680	001					
METHOD BLANK: 162851		Matri	ix: Water			
Associated Lab Samples: 26235680	001					
		Blank	Reporting	•		
Parameter	Units	Result	Limit	MDL	Analyz	zed Qualifiers
Chlorine, Total Residual	mg/L	NI	D	0.1	0.1 09/27/19	15:35 H6
Chlorine, Total Residual	mg/L	NI	D	0.1	0.1 09/27/19	15:35 H6
·	mg/L 162852	NI	D	0.1	0.1 09/27/19	15:35 H6
·		NI	LCS	LCS	0.1 09/27/19 % Rec	15:35 H6
·						15:35 H6 Qualifiers
LABORATORY CONTROL SAMPLE: Parameter	162852	Spike	LCS	LCS	% Rec	Qualifiers
LABORATORY CONTROL SAMPLE: Parameter	162852 Units	Spike Conc.	LCS	LCS % Rec	% Rec Limits	Qualifiers
LABORATORY CONTROL SAMPLE: Parameter Chlorine, Total Residual	162852 Units	Spike Conc.	LCS	LCS % Rec	% Rec Limits	Qualifiers
LABORATORY CONTROL SAMPLE: Parameter Chlorine, Total Residual	162852 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	162852 Units	Spike Conc. 1	LCS Result	LCS % Rec	% Rec Limits 86-116	Qualifiers

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Project:	Plant Hammond											
Pace Project No.:	2623568											
QC Batch:	36006		Analy	ysis Metho	d:	SM 4500-P						
QC Batch Method:	SM 4500-P		Analy	ysis Descri	ption:	4500PE Or	tho Phosp	horus				
Associated Lab Sam	ples: 262356800	1, 2623568002,	262356800)3								
METHOD BLANK:	162241			Matrix: W	/ater							
Associated Lab Sam	ples: 262356800	1, 2623568002,	262356800)3								
			Blai	nk	Reporting							
Param	neter	Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Orthophosphate as	с	mg/L		ND	0.02	20	0.020 (09/26/19 12	:53			
LABORATORY CON	ITROL SAMPLE:	162242										
			Spike	LC	cs	LCS	% F	Rec				
Param	neter	Units	Conc.	Re	sult	% Rec	Lin	nits	Qualifiers			
Orthophosphate as	D	mg/L	0	.5	0.51	10	2	80-120				
MATRIX SPIKE & M	ATRIX SPIKE DUPL	ICATE: 1622	44		162243							
			MS	MSD								
		2623556001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Orthophosphate as I	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.



Project: Pl	ant Hammond											
Pace Project No.: 26	23568											
QC Batch:	35996		Analy	sis Metho	d:	SM 4500-S	2 D					
QC Batch Method:	SM 4500-S2 D		Analy	sis Descri	ption:	4500S2D S	ulfide Wa	ater				
Associated Lab Sample	es: 262356800 ²	1, 2623568002,	262356800	3								
METHOD BLANK: 16	2154			Matrix: W	/ater							
Associated Lab Sample	es: 262356800 ²	1, 2623568002,	262356800	3								
			Blar	nk	Reporting							
Paramete	ər	Units	Res	ult	Limit	MD	L	Analyzed	l Qi	ualifiers		
Sulfide		mg/L		ND	0.2	0	0.20	09/26/19 09	:18			
LABORATORY CONTR	ROL SAMPLE: 1	162155										
			Spike	LC	S	LCS	%	Rec				
Paramete	ər	Units	Conc.	Res	sult	% Rec	Li	mits	Qualifiers			
Sulfide		mg/L	0.	5	0.45	9	0	80-120				
MATRIX SPIKE & MAT	RIX SPIKE DUPL	ICATE: 1621	56		162157							
			MS	MSD								
		2623499001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.48	0.47	ç	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.



Project: Plant Ha	ammond						
Pace Project No.: 2623568	3						
QC Batch: 35994		Analysis M	ethod:	SM 5210B			
QC Batch Method: SM 52	10B	Analysis D	escription:	5210B BOD, 9	5 day		
Associated Lab Samples: 2	2623568001						
METHOD BLANK: 162151		Matri	x: Water				
Associated Lab Samples:	2623568001						
		Blank	Reporting	•			
Parameter	Units	Result	Limit	MDL	Analy	zed C	Qualifiers
BOD, 5 day	mg/L	NE)	2.0	2.0 10/01/19	09:55 1A	
LABORATORY CONTROL S/	AMPLE: 162153						
		Spike	LCS	LCS	% Rec		
		эріке	LUU	LOO	70 IXEC		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	}
Parameter BOD, 5 day	Units mg/L	•				·	i
	mg/L	Conc.	Result	% Rec	Limits	·	<u> </u>
BOD, 5 day	mg/L	Conc.	Result	% Rec	Limits	1A	<u> </u>
BOD, 5 day	mg/L	Conc	Result 198	% Rec	Limits 85-115	1A	ilifiers

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.



Project:	Plant Hammond											
Pace Project No.:	2623568											
QC Batch:	35990		Analy	sis Metho	od: E	PA 300.0						
QC Batch Method:	EPA 300.0		Analy	vsis Descr	iption: 30	0.0 IC An	ions					
Associated Lab San	nples: 2623568	001										
METHOD BLANK:	162133			Matrix: W	Vater							
Associated Lab San	ples: 2623568	8001										
			Blar	nk	Reporting							
Paran	neter	Units	Resu	ult	Limit	MDI		Analyzed	Qı	ualifiers		
Nitrate as N		mg/L		ND	0.050	C		9/26/19 08				
Nitrite as N		mg/L	(0.013J	0.050		0.011 0	9/26/19 08	:55			
LABORATORY COM	ITROL SAMPLE:	162134										
			Spike	LC	CS	LCS	% R	ec				
Paran	neter	Units	Conc.	Re	sult	% Rec	Lim	its	Qualifiers			
Nitrate as N		mg/L	1	0	10.4	104	4	90-110		_		
Nitrite as N		mg/L	1	0	10.5	10	5	90-110				
MATRIX SPIKE & M	ATRIX SPIKE DU	IPLICATE: 1621	35		162136							
			MS	MSD								
		2623556001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Uni	ts Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrate as N	mg	/L 0.016J	10	10	10.2	10.1	102	101	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.



Project:	Plant Hammond										
Pace Project No.:	2623568										
QC Batch:	36095		Analysis M	lethod	:	EPA 350.1					
QC Batch Method:	EPA 350.1		Analysis D	escrip	tion:	350.1 Ammor	nia				
Associated Lab Sar	nples: 26235680	001									
METHOD BLANK:	162900		Matr	ix: Wa	ater						
Associated Lab Sar	nples: 26235680	001									
Parar	neter	Units	Blank Result	R	Reporting Limit	MDL		Analyze	hd	Qualifier	e
Parameter 					-		0.10			Quanner	
Nitrogen, Ammonia		mg/L	Ν	D	0.1	0	0.10	09/30/19 1	0:18		
LABORATORY CO	NTROL SAMPLE:	162901									
			Spike	LCS	5	LCS	ç	% Rec			
Parar	neter	Units	Conc.	Resu	ult	% Rec		Limits	Qual	lifiers	
Nitrogen, Ammonia		mg/L	10		10.3	103		90-110			
MATRIX SPIKE SA	MPLE:	162902									
			262360000)1	Spike	MS		MS		% Rec	
Parar	neter	Units	Result		Conc.	Result		% Rec		Limits	Qualifiers
Nitrogen, Ammonia		mg/L		ND	10	10).2	102	2	90-110	
MATRIX SPIKE SA	MPLE:	162903									
			262367900	01	Spike	MS		MS		% Rec	
Parar	neter	Units	Result		Conc.	Result		% Rec		Limits	Qualifiers
	Parameter Units rogen, Ammonia mg/L			0.33	10	4.0	2.1	118	- <u> </u>	90-110 N	11

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



Project:	Plant Hammond										
Pace Project No.:	2623568										
QC Batch:	36036		Analysis M	Nethod	: 6	EPA 351.2					
QC Batch Method:	EPA 351.2		Analysis [Descrip	tion:	351.2 TKN					
Associated Lab Sam	nples: 26235680	001									
METHOD BLANK:	162482		Mati	rix: Wa	iter						
Associated Lab Sam	nples: 26235680	001									
			Blank	R	Reporting						
Param	neter	Units	Result		Limit	MDL		Analy	zed	Quali	fiers
Nitrogen, Kjeldahl, T	otal	mg/L	Ν	ID	0.4	0	0.40	09/27/19	12:17		
LABORATORY CON	ITROL SAMPLE:	162483									
			Spike	LCS	3	LCS	9	% Rec			
Param	neter	Units	Conc.	Resu	ult	% Rec	l	_imits	Qua	alifiers	
Nitrogen, Kjeldahl, T	ōtal	mg/L	10		9.6	96		90-110			
MATRIX SPIKE SAM	/IPLE:	162484									
			26235460	01	Spike	MS		MS		% Rec	
Param	neter	Units	Result		Conc.	Result		% Rec		Limits	Qualifiers
Nitrogen, Kjeldahl, T	otal	mg/L		1.0	10		8.4		74	90-11	0 M1
MATRIX SPIKE SAM	MPLE:	162485									
			26235460	03	Spike	MS		MS		% Rec	
Param	neter	Units	Result		Conc.	Result		% Rec		Limits	Qualifiers
Nitrogen, Kjeldahl, T	otal	mg/L		1.6	10	4	0.0		84	90-11	0 14

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



Project:	Plant H	ammond											
Pace Project No.:	262356	8											
QC Batch:	57463	34		Analy	sis Metho	d:	SM 5310B						
QC Batch Method:	SM 53	310B		Analy	/sis Descrij	otion:	5310B Diss	olved Org	anic Carbon				
Associated Lab Sam	nples:	262356800	1, 2623568002,	262356800)3								
METHOD BLANK:	312243	6			Matrix: W	ater							
Associated Lab Sam	nples:	262356800	1, 2623568002,	262356800)3								
				Blar		Reporting							
Param	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Dissolved Organic C	arbon		mg/L		ND	1	.0	0.50	10/01/19 14::	32			
LABORATORY CON	ITROL S	SAMPLE: 3	3122437										
Param	neter		Units	Spike Conc.	LC Res	-	LCS % Rec		Rec nits C	Qualifiers			
Dissolved Organic C	arbon		mg/L	2	20	18.6	9:	3	90-110		_		
MATRIX SPIKE & M	ATRIX S		ICATE: 3122	438		3122439)						
				MS	MSD								
Parameter		Units	2623556001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic C		mg/L		20	20	19.6	19.5			80-120	1		Quai
U		0		-	-	-	-	-		-		-	
MATRIX SPIKE & M	ATRIX S	SPIKE DUPL	ICATE: 3122	-		312244	1						
			00000505	MS	MSD					04 F			
Parameter		Units	2623635001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic C	arbon	mg/L	ND	20	20	19.6	19.5	9	6 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

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



QUALIFIERS

Project: Plant Hammond Pace Project No.: 2623568

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.
- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- 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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	Plant Hammond
Pace Project No .:	2623568

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623568001 2623568002	HGWC-8 MW-29	EPA 3010A EPA 3010A	38701 38701	EPA 6010D EPA 6010D	38723 38723
2623568001	HGWC-8	EPA 3005A	36079	EPA 6020B	36104
2623568003	MW-30d	EPA 3005A	36136	EPA 6020B	36312
2623568001	HGWC-8	EPA 7470A	36152	EPA 7470A	36190
2623568001	HGWC-8	EPA 1664B	36140		
2623568001 2623568002 2623568003	HGWC-8 MW-29 MW-30d	SM 2320B SM 2320B SM 2320B	36180 36180 36180		
2623568001	HGWC-8	SM 2540C	36262		
2623568001	HGWC-8	SM 2540D	36092		
2623568001	HGWC-8	SM 4500-CI G	36088		
2623568001 2623568002 2623568003	HGWC-8 MW-29 MW-30d	SM 4500-P SM 4500-P SM 4500-P	36006 36006 36006		
2623568001 2623568002 2623568003	HGWC-8 MW-29 MW-30d	SM 4500-S2 D SM 4500-S2 D SM 4500-S2 D	35996 35996 35996		
2623568001	HGWC-8	SM 5210B	35994	SM 5210B	36230
623568001	HGWC-8	TKN-NH3 Calculation	36340		
2623568001	HGWC-8	EPA 300.0	35990		
2623568001	HGWC-8	EPA 350.1	36095		
2623568001	HGWC-8	EPA 351.2	36036	EPA 351.2	36058
2623568001 2623568002 2623568003	HGWC-8 MW-29 MW-30d	SM 5310B SM 5310B SM 5310B	574634 574634 574634		

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

Section A		Section B	Section C	υ	
Require	Required Client Information:		Invoice Ir	Invoice Information:	Page:) Of 3
Company:	9: Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Attention: scs	scsinvoices@southernco.com	
Address:			Company	r Name:	
lanta,	Attanta, GA 30339		Address:		Binguidibiry (Agarey
Email:	jabraham@southemco.com	Purchase Order #: SCS10382775	Pace Quote:	51e:	
Phone:	(404)506-7239 Fax	Project Name: Plant Hammond	Pace Pro	Pace Project Manager: betsy.mcdaniel@pacelabs.com,	State (Coceritori
guest	Requested Due Date: Standord TAX	Project #: GW (058)	Pace Profile #:	(AP)	GA
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	MATRIX	to lett) OR CO		Preservatives NNNNNNN	NN
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Pace Analytical

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Sa	mple Condition	n Upon Receipt	
Face Analytical Client Name	: GA	Powere	Project #
Courler: Fed Ex UPS USPS Clie Tracking #:			WO#: 2623568 PM: BM Due Date: 10/02/19
Custody Seal on Cooler/Box Present:	🗌 no 🛛 Seals	s intact: ves	CLIENT: GAPower-CCR
Packing Material: DBubble Wrap	Bags 🗌 None	Other	
Thermometer Used 8.3	Type of Ice: We		Samples on ice, cooling process has begun
Cooler Temperature 2.3 Temp should be above freezing to 6°C	Biological Tissue		Date and Initials of person examining contents: 9/26/19/19
Chain of Custody Present:		1.	
Chain of Custody Filled Out:		2.	
Chain of Custody Relinquished:		3.	
Sampler Name & Signature on COC:		4.	
Samples Arrived within Hold Time:		5.	
Short Hold Time Analysis (<72hr):		6.	
Rush Turn Around Time Requested:		7.	
Sufficient Volume:		8.	
Correct Containers Used:		9.	
-Pace Containers Used:			
Containers Intact:		10.	
Filtered volume received for Dissolved tests		11.	
Sample Labels match COC:		12.	
-Includes date/time/ID/Analysis Matrix:	W		
All containers needing preservation have been checked.		13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	Yes No N/		
exceptions: VOA, coliform, TOC, Q&G, WI-DRO (water)		Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	□Yes □No ₽N/A	14.	
Headspace in VOA Vials (>6mm):		15.	
Trip Blank Present:	□Yes □No &N//	16.	
Trip Blank Custody Seals Present	□Yes □No ØN	7	
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Resolution: Person Contacted:	Date	/Time:	Field Data Required? Y / N
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)

1



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

October 11, 2019

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

RE: Project: Plant Hammond AP GW6581 Pace Project No.: 2623635

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,

Batery Mr Damil

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.: 2623635

Atlanta Certification IDs

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

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

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

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



SAMPLE SUMMARY

Project: Plant Hammond AP GW6581

Pace Project No.: 2623635

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623635001	HGWC-7	Water	09/25/19 11:22	09/26/19 15:22
2623635002	MW-5	Water	09/25/19 16:35	09/26/19 15:22
2623635003	MW-20	Water	09/25/19 11:10	09/26/19 15:22



SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581

Pace Project No.: 2623635

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623635001	HGWC-7	EPA 6010	LEC	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
2623635002	MW-5	EPA 6010	LEC	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
2623635003	MW-20	EPA 6010	ATC	7	PASI-O
		EPA 6020B	CSW	2	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O



Project: Plant Hammond AP GW6581

Pace Project No.: 2623635

Sample: HGWC-7	Lab ID:	2623635001	Collecte	d: 09/25/19	9 11:22	Received: 09/	26/19 15:22 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepa	ration Meth	od: EPA	3010			
Iron	0.18	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 22:10	7439-89-6	
Magnesium	10.2	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 22:10	7439-95-4	
Manganese	0.31	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 22:10	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 22:10	7723-14-0	N2
Potassium	2.8	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 22:10	7440-09-7	
Sodium	10.4	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 22:10	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	151	mg/L	20.0	20.0	1		09/30/19 17:50		
Alkalinity, Total as CaCO3	151	mg/L	20.0	20.0	1		09/30/19 17:50		
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 10:45		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:08	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 18:26		



Project: Plant Hammond AP GW6581

Pace Project No.: 2623635

Sample: MW-5	Lab ID:	2623635002	Collected	: 09/25/1	9 16:35	Received: 09/	26/19 15:22 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepara	ation Meth	od: EPA	3010			
Iron	0.051	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 22:15	7439-89-6	
Magnesium	10.8	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 22:15	7439-95-4	
Manganese	0.0042J	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 22:15	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 22:15	7723-14-0	N2
Potassium	0.96J	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 22:15	7440-09-7	
Sodium	21.6	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 22:15	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	165	mg/L	20.0	20.0	1		10/01/19 17:43		
Alkalinity, Total as CaCO3	165	mg/L	20.0	20.0	1		10/01/19 17:43		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:14		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:47	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	0.57J	mg/L	1.0	0.50	1		10/01/19 19:11		



Project: Plant Hammond AP GW6581

Pace Project No.: 2623635

Sample: MW-20	Lab ID:	2623635003	Collecte	d: 09/25/19	9 11:10	Received: 09/	26/19 15:22 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepa	ration Metho	od: EPA	3010			
Iron	3.1	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 12:49	7439-89-6	
Magnesium	8.6	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 12:49	7439-95-4	
Manganese	0.17	mg/L	0.0050	0.00042	1	10/08/19 16:13			
Phosphorus	0.083	mg/L	0.045	0.014	1		10/09/19 12:49		N2
Potassium	0.31J	mg/L	1.0	0.15	1	10/08/19 16:13			
Sodium	11.0	mg/L	2.0	0.27	1		10/09/19 12:49	7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	337000	ug/L	3210	506	1	10/08/19 16:13	10/09/19 12:49		
6020B MET ICPMS	Analytical	Method: EPA	6020B Prep	paration Met	hod: EF	PA 3005A			
Copper	ND	mg/L	0.025	0.00019	1	09/30/19 12:43	10/01/19 21:21	7440-50-8	
Zinc	ND	mg/L	0.010	0.0015	1	09/30/19 12:43	10/01/19 21:21	7440-66-6	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity, Bicarbonate (CaCO3)	211	mg/L	20.0	20.0	1		10/01/19 17:47		
Alkalinity, Total as CaCO3	211	mg/L	20.0	20.0	1		10/01/19 17:47		
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	455	mg/L	10.0	10.0	1		10/02/19 12:05		
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:15		1A,H1
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:48	18496-25-8	
300.0 IC Anions	Analytical	Method: EPA	300.0						
Nitrate as N	0.70	mg/L	0.050	0.0050	1		09/27/19 04:52	14797-55-8	
Nitrite as N	ND	mg/L	0.050	0.011	1		09/27/19 04:52	14797-65-0	
350.1 Ammonia	Analytical	Method: EPA	350.1						
Nitrogen, Ammonia	0.12	mg/L	0.10	0.10	1		09/30/19 10:36	7664-41-7	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 19:29		



Project: Plant Hammond AP GW6581

Pace Project No.: 2623635

QC Batch: 576632		Analysis Meth	nod: EF	PA 6010		
QC Batch Method: EPA 301	Batch Method: EPA 3010			10 MET		
Associated Lab Samples: 2	623635001, 2623635002					
METHOD BLANK: 3133743		Matrix:	Water			
Associated Lab Samples: 2	623635001, 2623635002					
		Blank	Reporting			
Parameter	Units	Result	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

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

3133746

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REPORT OF LABORATORY ANALYSIS

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Project: Plant Hammond AP GW6581

Pace Project No.: 2623635

001	10,000 100	2020000

QC Batch: 576681		Analysis Metl	hod: EP	A 6010		
QC Batch Method: EPA 3010		Analysis Des	cription: 60 [°]	10 MET		
Associated Lab Samples: 26236350	03					
METHOD BLANK: 3134011		Matrix:	Water			
Associated Lab Samples: 26236350	03					
		Blank	Reporting			
Parameter	Units	Result	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 I	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 S	PIKE DUPL	ICATE: 3134	• • •		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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Project:	Plant Hammond AP GW6581

Pace Project No.: 262363	50											
QC Batch: 3617	0		Analy	sis Metho	d: E	PA 6020B						
QC Batch Method: EPA	3005A		Analy	sis Descri	iption: 6	020B MET						
Associated Lab Samples:	2623635003	3										
METHOD BLANK: 16333	6			Matrix: N	/ater							
Associated Lab Samples:	2623635003	3										
_			Blan		Reporting							
Parameter		Units	Resu	ult	Limit	MDL		Analyzed	Qı	ualifiers		
Copper		mg/L		ND	0.025	-		10/01/19 18:				
Zinc		mg/L			0.010		.0015 1	10/01/19 18:	14			
		ing/L		ND	0.010	, 0	.0015	10/01/19 10.	14			
LABORATORY CONTROL	SAMPLE: 1	163337			0.010			10/01/13 10.				
	SAMPLE: 1	163337	Spike	LC	cs	LCS	% F	Rec				
LABORATORY CONTROL Parameter	SAMPLE: 1		Spike Conc.	LC	cs			Rec	Qualifiers			
Parameter	SAMPLE: 1	163337 Units mg/L	Conc. 0.	LC Re: 1	CS sult 0.10	LCS % Rec 100	% F Lin)	Rec hits 80-120		_		
Parameter	SAMPLE: 1	163337 Units	Conc.	LC Re: 1	CS sult	LCS % Rec	% F Lin)	Rec				
Parameter		163337 Units mg/L mg/L	Conc. 0. 0.	LC Re: 1	CS sult 0.10	LCS % Rec 100	% F Lin)	Rec hits 80-120				
Parameter Copper Zinc		163337 Units mg/L mg/L	Conc. 0. 0.	LC Re: 1	CS sult 0.10 0.10 163339	LCS % Rec 100 102	% F 	Rec hits 80-120 80-120	Qualifiers			
Parameter Copper Zinc MATRIX SPIKE & MATRIX	SPIKE DUPL	163337 Units mg/L mg/L ICATE: 1633 2623623007	38 MS Spike	LC Re: 1 1 MSD Spike	CS sult 0.10 0.10 163339 MS	LCS % Rec 100 102 MSD	% F 	Rec hits 80-120 80-120 MSD	Qualifiers % Rec		Max	
Parameter Copper Zinc		163337 Units mg/L mg/L ICATE: 1633	Conc. 0. 0. 38 MS	LC Re: 1 1 MSD	CS sult 0.10 0.10 163339	LCS % Rec 100 102	% F 	Rec hits 80-120 80-120	Qualifiers	RPD	Max RPD	Qual
Parameter Copper Zinc MATRIX SPIKE & MATRIX	SPIKE DUPL	163337 Units mg/L mg/L ICATE: 1633 2623623007	38 MS Spike	LC Re: 1 1 MSD Spike	CS sult 0.10 0.10 163339 MS	LCS % Rec 100 102 MSD	% F 	Rec nits 80-120 80-120 MSD % Rec 102	Qualifiers % Rec Limits	2	RPD	Qual

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.



Project: Plant Hammond A Pace Project No.: 2623635	P GW6581					
QC Batch: 36180		Analysis M	lethod:	SM 2320B		
QC Batch Method: SM 2320B		Analysis D	escription:	2320B Alkalini	ty	
Associated Lab Samples: 26236350	01					
METHOD BLANK: 163383		Matri	x: Water			
Associated Lab Samples: 26236350	01					
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyz	zed Qualifiers
		N	20	0	20.0 09/30/19	14.01
Alkalinity, Total as CaCO3	mg/L	INL	20	.0 4	20.0 09/30/19	14.21
Alkalinity, Total as CaCO3		N	5 20	.0 2	20.0 09/30/19	14.21
-	163384		-			14.21
LABORATORY CONTROL SAMPLE: Parameter		Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
LABORATORY CONTROL SAMPLE:	163384	Spike	LCS	LCS	% Rec	
LABORATORY CONTROL SAMPLE: Parameter	163384 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	
LABORATORY CONTROL SAMPLE: Parameter	163384 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	
LABORATORY CONTROL SAMPLE: Parameter Alkalinity, Total as CaCO3	163384 Units	Spike Conc.	LCS Result	LCS % Rec 100	% Rec Limits 85-115 Max	Qualifiers
LABORATORY CONTROL SAMPLE: Parameter Alkalinity, Total as CaCO3	163384 Units	Spike Conc. 100	LCS Result 100	LCS % Rec	% Rec Limits 85-115	

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.



Project: Plant Hammond Pace Project No.: 2623635	I AP GW6581							
QC Batch: 36284		Analysis M	lethod:	SM 2320B				
QC Batch Method: SM 2320B		Analysis D	escription:	2320B Alkalir	nity			
Associated Lab Samples: 262363	5002, 2623635003							
METHOD BLANK: 163853		Matri	x: Water					
Associated Lab Samples: 262363	5002, 2623635003							
		Blank	Reporting					
Parameter	Units	Result	Limit	MDL		Analyz	zed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	N	20	0.0	20.0	10/01/19	17:35	
LABORATORY CONTROL SAMPLE	: 163854 Units	Spike Conc.	LCS Result	LCS % Rec		6 Rec .imits	Qua	lifiers
Alkalinity, Total as CaCO3	mg/L	100	98.0	98		85-115		
SAMPLE DUPLICATE: 163855						Мах		
		JEJJEJEUUJ						
Parameter	Units	2623635002 Result	Dup Result	RPD		RPD		Qualifiers

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Project:	Plant Hammond A	P GW6581							
Pace Project No.:	2623635								
QC Batch:	36325		Analysis N	lethod:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	issolved Solids			
Associated Lab Sar	mples: 26236350	03							
LABORATORY CO	NTROL SAMPLE:	164004							
			Spike	LCS	LCS	% Rec			
Para	meter	Units	Conc.	Result	% Rec	Limits	Qu	alifiers	
Total Dissolved Sol	ids	mg/L	400	421	105	84-108			
SAMPLE DUPLICA	TE: 164005								
			2623620005	- 1		Max			
Para	meter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Sol	ids	mg/L	15	i9 1	152	5	10		
SAMPLE DUPLICA	TE: 164006								
			2623623005	Dup		Max			
Parar	meter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Sol	ids	mg/L	81.	0 8	3.0	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.



Project: Pace Project No.:	Plant Hammond AF 2623635	9 GW6581										
QC Batch:	36055		Anal	ysis Metho	d:	SM 4500-P						
QC Batch Method:	SM 4500-P		Anal	ysis Descri	ption:	4500PE Ort	ho Phosph	orus				
Associated Lab San	nples: 262363500	1, 2623635002,	262363500	03								
METHOD BLANK:	162666			Matrix: W	/ater							
Associated Lab San	nples: 262363500	1, 2623635002,	262363500	03								
			Bla	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	MD	L	Analyzed	Q	ualifiers		
Orthophosphate as	P	mg/L		ND	0.02	0	0.020 09	9/27/19 10	:41			
LABORATORY COM	NTROL SAMPLE:	162667										
			Spike	LC	S	LCS	% R	ec				
Paran	neter	Units	Conc.	Res	sult	% Rec	Limi	ts	Qualifiers			
Orthophosphate as	P	mg/L	0	.5	0.52	10	3 8	30-120				
MATRIX SPIKE & M	IATRIX SPIKE DUPL	ICATE: 1626	68		162669							
			MS	MSD								
		2623638001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	· Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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.



	Plant Hammond AP 2623635	9 GW6581										
QC Batch:	36186		Anal	ysis Metho	d:	SM 4500-S	2 D					
QC Batch Method:	SM 4500-S2 D		Anal	ysis Descri	ption:	4500S2D S	ulfide Wate	er				
Associated Lab Sam	ples: 262363500	1, 2623635002,	262363500	03								
METHOD BLANK:	163399			Matrix: W	ater							
Associated Lab Sam	ples: 262363500	1, 2623635002,	262363500	03								
			Bla	nk	Reporting							
Param	eter	Units	Res	sult	Limit	MD	L	Analyzed	Qı	ualifiers		
Sulfide		mg/L		ND	0.2	20	0.20 09	9/30/19 14:	:59			
LABORATORY CON	TROL SAMPLE:	163400										
			Spike	LC	S	LCS	% R	ec				
Param	eter	Units	Conc.	Res	sult	% Rec	Limi	ts	Qualifiers			
Sulfide		mg/L	0	.5	0.51	10	1 8	30-120				
MATRIX SPIKE & M	ATRIX SPIKE DUPL	ICATE: 1634	01		163402							
			MS	MSD								
		2623644003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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.



Hammond AP GW6581	Project:

Pace Project No.: 2623635		0110001										
QC Batch: 36045			Analy	ysis Metho	od: E	PA 300.0						
QC Batch Method: EPA 300).0		Analy	ysis Desc	ription: 3	00.0 IC An	ions					
Associated Lab Samples: 2	62363500	3										
METHOD BLANK: 162623				Matrix: V	Water							
Associated Lab Samples: 2	62363500	3										
Devenueter		Units	Blar		Reporting Limit	MD	1	A sea h sea a				
Parameter			Res		-			Analyzed		alifiers		
Nitrate as N Nitrite as N		mg/L mg/L		0.013J 0.020J	0.050 0.050			09/27/19 01 09/27/19 01	-			
LABORATORY CONTROL SA	MPLE:	162624						_				
Parameter		Units	Spike Conc.		CS esult	LCS % Rec		Rec mits	Qualifiers			
Nitrate as N		mg/L	1	0	10.6	10	6	90-110				
Nitrite as N		mg/L	1	0	10.9	10	9	90-110				
MATRIX SPIKE & MATRIX SP	IKE DUPL	ICATE: 1626	25		162626							
			MS	MSD								
_		2623614003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrate as N	mg/L	0.66	10	10		11.2	10			0	-	
Nitrite as N	mg/L	0.020J	10	10) 10.9	10.9	10	9 108	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.



· , · · · ·	ant Hammond A 623635	NP GW6581								
	36095		Analysis M			EPA 350.1				
QC Batch Method: I Associated Lab Sample	EPA 350.1 es: 26236350	003	Analysis D	escription	n: 3	50.1 Ammonia				
METHOD BLANK: 16	62900		Matr	ix: Water						
Associated Lab Sample	es: 26236350	003	Blank	Rep	orting					
Paramete	er	Units	Result		mit	MDL	Analyz	ed	Qualifiers	
Nitrogen, Ammonia		mg/L	N	D	0.10	0.1	09/30/19	10:18		
LABORATORY CONTR	ROL SAMPLE:	162901								
Paramete	er	Units	Spike Conc.	LCS Result		LCS % Rec	% Rec Limits	Qualifi	ers	
Nitrogen, Ammonia		mg/L	10	1	0.3	103	90-110			
MATRIX SPIKE SAMP	LE:	162902								
-			262360000	-	pike	MS	MS		Rec	o
Paramete	er	Units	Result		onc.	Result	% Rec		mits	Qualifiers
Nitrogen, Ammonia		mg/L		ND	10	10.2	10	12	90-110	
MATRIX SPIKE SAMP	LE:	162903								
Paramete	er	Units	262367900 Result		pike onc.	MS Result	MS % Rec		Rec mits	Qualifiers
Nitrogen, Ammonia		mg/L		0.33	10	12.1	11	8	90-110 M	1

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.



-)	Plant H 262363	lammond AF 35	9 GW6581										
QC Batch:	5746	34		Analy	sis Metho	d: :	SM 5310B						
QC Batch Method:	SM 5	310B		Analy	/sis Descri	ption:	5310B Diss	olved Org	ganic Carbon				
Associated Lab Sam	ples:	262363500	1, 2623635002,	262363500)3								
METHOD BLANK:	312243	36			Matrix: W	ater							
Associated Lab Sam	ples:	262363500	1, 2623635002,	262363500)3								
				Blar	nk	Reporting							
Param	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Dissolved Organic C	arbon		mg/L		ND	1.	0	0.50	10/01/19 14::	32			
LABORATORY CON	ITROL	SAMPLE:	3122437	Spike	LC	· c	LCS	0/	Rec				
Param	neter		Units	Conc.	Res	-	% Rec			Qualifiers			
Dissolved Organic C	arbon		mg/L	2	20	18.6	9:	3	90-110		_		
MATRIX SPIKE & M	ATRIX	SPIKE DUPI	_ICATE: 3122	438		3122439)						
				MS	MSD								
			2623556001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dissolved Organic C	arbon	mg/L	ND	20	20	19.6	19.5	9	6 95	80-120	1	20	
MATRIX SPIKE & M	ATRIX	SPIKE DUPI	_ICATE: 3122	440		3122441							
				MS	MSD								
			2623635001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dissolved Organic C	arbon	mg/L	ND	20	20	19.6	19.5	9	6 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.



QUALIFIERS

Project: Plant Hammond AP GW6581

Pace Project No.: 2623635

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

- 1A Sample was received outside of the EPA recommended holding time or was received with insufficient time to run sample within the EPA recommended holding time.
- H1 Analysis conducted outside the EPA method holding time.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- 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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581 Pace Project No.: 2623635

Analytical QC Batch Method QC Batch Lab ID Sample ID Batch **Analytical Method** 2623635001 HGWC-7 EPA 3010 576632 EPA 6010 576717 2623635002 MW-5 EPA 3010 576632 EPA 6010 576717 EPA 3010 576681 EPA 6010 2623635003 MW-20 576722 2623635003 MW-20 EPA 3005A 36170 EPA 6020B 36202 HGWC-7 2623635001 SM 2320B 36180 2623635002 MW-5 SM 2320B 36284 2623635003 MW-20 SM 2320B 36284 2623635003 MW-20 SM 2540C 36325 2623635001 HGWC-7 SM 4500-P 36055 2623635002 **MW-5** SM 4500-P 36055 2623635003 MW-20 SM 4500-P 36055 2623635001 HGWC-7 SM 4500-S2 D 36186 2623635002 **MW-5** SM 4500-S2 D 36186 2623635003 MW-20 SM 4500-S2 D 36186 2623635003 MW-20 EPA 300.0 36045 MW-20 2623635003 EPA 350.1 36095 HGWC-7 2623635001 SM 5310B 574634 2623635002 **MW-5** SM 5310B 574634 2623635003 MW-20 SM 5310B 574634

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

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Address: 2480 Maner Road	Copy To:	Ra	
		Address:	Begulátory/Agenov
jabraham@southernco.com	Purchase Order #: SCS10382775	Pace Quote:	
Phone: (404)506-7239 Fax:	Project Name: Plant Hammond	Pace Project Manager: betsv.mcdaniel@pacelabs.com.	State//Location
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Pace Analytical

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

Company: Georgia Power - Coal Combustion Residuals Report To: Join Abraham Address: 2:400 Maner Road Copy To: Leuren Pethy. Geosyntec Allamia. (AA 30339 Email: jabraham@southenno.com Purchase Order #: SCS10382775 Fmail: jabraham@southenno.com Purchase Order #: SCS10382775 Phone: (Ad)(S)C6-7239 Fax: Project Name: Plant Hammond Requested Due Date: Dark data Project Name: Plant Hammond Requested Due Date: Dark data Project Name: Plant Hammond Requested Due Date: Dark data Project Name: Plant Hammond Requested Due Date: Dark data MARIK COE Stant Requested Due Date: Dark data Mark data Mark data Mark data Requested Due Date: Dark data Mark data Mark data Mark data Requester per box. Mark data Mark data Mark data Mark data Reade Mark data Mark data Mark data Mark data Mark data Reade Mark data Mark data Mark data Mark data Mark data Reade Mark data Mark data Mark data Mark data Mark data </th <th>Attention: Scattronces Comparty Name: Comparty Name: Comparty Name: Compart, Name: Comparty Name: Comparty Name:</th> <th>Residual Chlorine (Y/N) A Chluch (Y/N) CA CA CA CA CA CA CA CA CA CA</th>	Attention: Scattronces Comparty Name: Comparty Name: Comparty Name: Compart, Name: Comparty Name: Comparty Name:	Residual Chlorine (Y/N) A Chluch (Y/N) CA CA CA CA CA CA CA CA CA CA
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Custody Seal on Cooler/Box Present:	yes 🗌 nõ Šeal:	s intact: 🗌 yes	🗌 no	rioj. Name.		
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Cooler Temperature			10	te and Initials of contents:	erson examinin	
Chain of Custody Present:		A 1.				
Chain of Custody Filled Out:		A 2.				
Chain of Custody Relinquished:		A 3.				
Sampler Name & Signature on COC:	CHIES DNO DN/	A 4.				
Samples Arrived within Hold Time:		A 5.				
Short Hold Time Analysis (<72hr):	□Yes □No _□N/	A 6.				
Rush Turn Around Time Requested:		A 7.				
Sufficient Volume:		A 8.		•		
Correct Containers Used:		A 9.				
-Pace Containers Used:		A				
Containers Intact:		A 10.				
Filtered volume received for Dissolved tests		A 11. 0-pho	$e_{s} \neq k$	10c fiel	dfilte.	red
Sample Labels match COC:		/A 12.			, ,	
-Includes date/time/ID/Analysis Matrix						
All containers needing preservation have been checke	ed. Tyes DNo DN	/A 13.				
All containers needing preservation are found to be compliance with EPA recommendation.						
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes □No	Initial when completed		of added rvative		
Samples checked for dechlorination:	⊡Yes ⊡No 2911	TA 14.				
Headspace in VOA Vials (>6mm):	□Yes □No 口Ñ	IA 15.			-	
Trip Blank Present:		/A 16.				
Trip Blank Custody Seals Present		ΙΑ .		ſ		
Pace Trip Blank Lot # (if purchased):						
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Person Contacted:	Dat	e/Time:	rieiu	Data Nequileu :		
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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,

Kein Hung

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

Ormond Beach 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

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



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



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-CI 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
623704002	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-CI 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



Project: Plant Hammond GW6581

Pace Project No.: 2623704

Sample: EB-02	Lab ID:	2623704001	Collected	1: 09/26/19	9 17:50	Received: 09/	27/19 13:15 Ma	atrix: Water	
_			Report			_			
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA	6010D Prepa	aration Me	hod: EF	PA 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		10/06/19 16:59		
Phosphorus	0.041J	mg/L	0.050	0.023	1	10/01/19 12:18			
Potassium	ND	mg/L	0.20	0.026	1	10/01/19 12:18			
Sodium	ND	mg/L	1.0	0.19 0.40	1	10/01/19 12:18		7440-23-5	
Total Hardness by 2340B	ND	mg/L	2.7		1	10/01/19 12:18	10/06/19 16:59		
6020B MET ICPMS	-	Method: EPA							
Copper	ND	mg/L	0.025	0.00019	1	09/30/19 13:30	10/03/19 20:25		_
Zinc	0.0016J	mg/L	0.010	0.0015	1	09/30/19 13:30	10/03/19 20:25	7440-66-6	В
7470 Mercury	Analytical	Method: EPA	7470A Prepa	aration Met	hod: EP	A 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 2	320B						
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 2	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 2	2540D						
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/30/19 12:16		
4500CL G Chlorine, Residual	Analytical	Method: SM 4	500-CI 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 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 13:59		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-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 5	210B Prepa	ration Meth	nod: 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 Calcula	tion					
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

REPORT OF LABORATORY ANALYSIS

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Project: Plant Hammond GW6581

Pace Project No.: 2623704

Sample: EB-02	Lab ID:	2623704001	Collected	d: 09/26/19	9 17:50	Received: 09/	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 Prepa	aration Meth	nod: EP	A 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 5	310B								
Dissolved Organic Carbon	0.65J	mg/L	1.0	0.50	1		10/02/19 15:32				



Project: Plant Hammond GW6581

Pace Project No.: 2623704

Sample: FB-02	Lab ID:	2623704002	Collecte	d: 09/26/19	9 18:25	Received: 09/	27/19 13:15 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA	6010D Prep	paration Met	hod: EF	PA 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		
Manganese	ND	mg/L	0.040	0.0061	1	10/01/19 12:18			
Phosphorus	ND	mg/L	0.050	0.023	1		10/06/19 17:04		
Potassium Sodium	ND ND	mg/L mg/L	0.20 1.0	0.026 0.19	1 1		10/06/19 17:04 10/06/19 17:04		
Total Hardness by 2340B	ND	mg/L	2.7	0.19	1		10/06/19 17:04	7440-23-5	
,		0					10/00/13 17.04		
6020B MET ICPMS	-	Method: EPA			noa: EF	A 3005A			
Copper	0.00030J	mg/L	0.025	0.00019	1	09/30/19 13:30	10/03/19 20:30		_
Zinc	0.0019J	mg/L	0.010	0.0015	1	09/30/19 13:30	10/03/19 20:30	7440-66-6	В
7470 Mercury	Analytical	Method: EPA	7470A Prep	paration Met	hod: EP	PA 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 2	320B						
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 2	2540C						
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/03/19 16:28		
2540D Total Suspended Solids	Analytical	Method: SM 2	2540D						
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/30/19 12:16		
4500CL G Chlorine, Residual	Analytical	Method: SM 4	500-CI 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 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 13:59		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-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 5	210B Prepa	aration Meth	nod: 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 Calcul	ation					
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

REPORT OF LABORATORY ANALYSIS

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Project: Plant Hammond GW6581

Pace Project No.: 2623704

Sample: FB-02	Lab ID:	2623704002	Collected	: 09/26/19	9 18:25	Received: 09/	/27/19 13:15 Ma	atrix: 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 Prepar	ation Meth	od: EP	A 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 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 16:13		



Project: Plant Ha	ammond GW6	6581										
Pace Project No.: 2623704	4											
QC Batch: 36428			Analy	/sis Metho	d:	EPA 7470A						
QC Batch Method: EPA 74	470A		Analy	sis Descri	iption:	7470 Mercu	iry					
Associated Lab Samples:	2623704001,	2623704002										
METHOD BLANK: 164509				Matrix: W	/ater							
Associated Lab Samples:	2623704001,	2623704002										
			Blar	nk	Reporting							
Parameter		Units	Res	ult	Limit	MD	L	Analyzed	l Qi	ualifiers		
Mercury		mg/L		ND	0.0005	i0 0.	00014 1	0/04/19 10	:46			
LABORATORY CONTROL S	AMPLE: 16	64510										
			Spike	LC	-	LCS	% F		0 ""			
Parameter		Units	Conc.	Re:	sult	% Rec	Lin	nits	Qualifiers	_		
Mercury		mg/L	0.002	25	0.0025	10	1	80-120				
			44		404540							
MATRIX SPIKE & MATRIX S	PIKE DUPLIC	CATE: 1645	MS	MSD	164512							
		2623696001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0022	0.0022	88	88	3 75-125	0	20	

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Project: Plant Hammond GW6581

Pace Project No.: 2623704

QC Batch: 3	6168		Analysis Meth	hod: E	EPA 6010D		
QC Batch Method: E	PA 3010A		Analysis Des	cription: 6	6010D MET		
Associated Lab Sample	s: 262370400	01, 2623704002					
METHOD BLANK: 16	328		Matrix:	Water			
Associated Lab Sample	s: 262370400	01, 2623704002					
			Blank	Reporting			
Paramete	r	Units	Result	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.(0.19	10/06/19 16:50	
Total Hardness by 2340	3	mg/L	ND	2.7	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 Hammo	ond GW65	81										
Pace Project No.:	2623704												
QC Batch:	36173			Analy	sis Metho	od: E	PA 6020B						
QC Batch Method	EPA 3005A			Analy	/sis Desci	ription: 6	020B MET						
Associated Lab Sa	amples: 2623	704001, 2	623704002										
METHOD BLANK	163347				Matrix: V	Vater							
Associated Lab Sa	amples: 2623	704001, 2	623704002										
				Blar		Reporting							
Para	ameter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Copper			mg/L		ND	0.02			10/03/19 16:	-			
Zinc			mg/L	0	.0016J	0.010) (0.0015 1	10/03/19 16:	:32			
LABORATORY CO	ONTROL SAMP	LE: 163	348										
				Spike	L	CS	LCS	% F	Rec				
Para	ameter		Units	Conc.	Re	sult	% Rec	Lin	nits	Qualifiers			
Copper			mg/L	0.	.1	0.099	9	9	80-120		_		
Zinc			mg/L	0.	.1	0.10	10	0	80-120				
MATRIX SPIKE &	MATRIX SPIKE	DUPLICA		49		163350							
				MS	MSD								
		26	623696001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramet	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Copper Zinc		mg/L	ND 0.0040J	0.1	0.1 0.1	0.088	0.090	88 87		75-125 75-125	3	20 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.



Project: Plant Hammond C Pace Project No.: 2623704	GW6581						
QC Batch: 36282		Analysis Met	thod: E	EPA 1664B			
QC Batch Method: EPA 1664B		Analysis Des	scription:	664 HEM, Oil a	and Grease		
Associated Lab Samples: 26237040	001, 2623704002						
METHOD BLANK: 163839		Matrix:	Water				
Associated Lab Samples: 26237040	001, 2623704002						
Parameter	Units	Blank Result	Reporting Limit	MDL	Analyze	d Qualifier	rs
Oil and Grease	mg/L	ND	5.0	5 5	5.0 10/02/19 08	3:00	
LABORATORY CONTROL SAMPLE:	163840						
Parameter	Units		LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
Oil and Grease	mg/L	40	39.8	100	78-114		
MATRIX SPIKE SAMPLE:	163842						
		2623558001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Oil and Grease	mg/L	23	3.1 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	N)		75	_

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.



· , · · · ·	nt Hammond G 3704	W6581					
QC Batch: 36	503		Analysis M	ethod:	SM 2320B		
QC Batch Method: SN	/I 2320B		Analysis D	escription:	2320B Alkalin	ity, Low Level	
Associated Lab Samples	: 26237040	01, 2623704002					
METHOD BLANK: 164	938		Matri	x: Water			
Associated Lab Samples	: 26237040	01, 2623704002					
			Blank	Reportin	g		
Parameter		Units	Result	Limit	MDL	Analyz	ed Qualifiers
Alkalinity, Total as CaCO	3	mg/L	NE)	1.0	1.0 10/04/19	14:44
LABORATORY CONTRO	DL SAMPLE:	164939					
			Spike	LCS	LCS	% Rec	
Parameter		Units	Conc.	Result	% Rec	Limits	Qualifiers
Alkalinity, Total as CaCO	3	mg/L	50	47.5	95	85-115	
SAMPLE DUPLICATE:	164940						
			2623704001	Dup		Max	
Parameter		Units	Result	Result	RPD	RPD	Qualifiers
Alkalinity, Total as CaCO	3	mg/L	N		ND		10

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Project: Pace Project No.:	Plant Hammond G 2623704	W6581							
QC Batch:	36437		Analysis M	Method:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis Description:		2540C Total D	issolved Solid	6		
Associated Lab Sar	nples: 26237040	01, 2623704002							
LABORATORY CO	NTROL SAMPLE:	164569							
			Spike	LCS	LCS	% Rec			
Parar	neter	Units	Conc.	Result	% Rec	Limits	Q	ualifiers	
Total Dissolved Solids		mg/L	400	412	103	84-108	3		
SAMPLE DUPLICA	TE: 164570								
			2623700006			Max			
Parar	neter	Units	Result	Result	RPD			Qualifiers	
Total Dissolved Solids		mg/L	22	25 2	219	3	10		
SAMPLE DUPLICA	TE: 164571								
			2623710002	2 Dup		Max			
Parameter		Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Soli	ds	mg/L	145	50 13	330	9	10		

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Project: Plant Hammond G Pace Project No.: 2623704	GW6581								
QC Batch: 36165	Analysis M	lethod:	SM 2540D						
QC Batch Method: SM 2540D		Analysis D	escription:	2540D Total Suspended Solids					
Associated Lab Samples: 26237040	01, 2623704002								
METHOD BLANK: 163320		Matr	ix: Water						
Associated Lab Samples: 26237040	01, 2623704002								
Parameter	Units	Blank Result	Reporting Limit) MDL	Analyz	zed Qualifiers			
Total Suspended Solids	mg/L	N	D	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									
		2623465001	Dup		Max				
Parameter	Units	Result	Result	RPD	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			

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.



Project: Pace Project No.:	Plant Hammond C 2623704	GW6581						
QC Batch:	36248		Analysis M	lethod:	SM 4500-CI 0	3		
QC Batch Method:	SM 4500-CI G		Analysis Description:		4500CL G Ch	lorine, Total Res	sidual	
Associated Lab Sar	nples: 26237040	001, 2623704002						
METHOD BLANK:	163705		Matri	x: Water				
Associated Lab Sar	nples: 26237040	001, 2623704002						
			Blank	Reporting	g			
Parar	neter	Units	Result Limit		MDL	Analy	zed	Qualifiers
Chlorine, Total Resi	dual	mg/L	N	 >	0.1	0.1 10/01/19	9 12:26	H6
LABORATORY COI		163706 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Quali	fiers
Chlorine, Total Resi		mg/L	1	1	100	86-116		
SAMPLE DUPLICA	TE: 163724		2623782001	Dup		Мах		
Paran	neter	Units	Result	Result	RPD	RPD		Qualifiers
Chlorine, Total Resi		mg/L	0.3		0.3	0	10 H3	

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.



- ,	Plant Hammond G 2623704	W6581										
QC Batch:	36125		Anal	ysis Metho	d:	SM 4500-P						
QC Batch Method:						Ortho Phosphorus						
Associated Lab Sam	oles: 262370400	01, 2623704002										
METHOD BLANK:	163138			Matrix: W	ater							
Associated Lab Sam	oles: 262370400	01, 2623704002										
Param	eter	Units	Blai Res		Reporting Limit	MD	L	Analyzed	l Qi	ualifiers	i	
Orthophosphate as P mg/L			ND	0.02	.0	0.020 0	9/28/19 13	:30				
LABORATORY CON	TROL SAMPLE:	163139										
Param	eter	Units	Spike Conc.	LC Res	-	LCS % Rec	% R Lim		Qualifiers			
Orthophosphate as F	,	mg/L	0	.5	0.51	10	1	80-120				
MATRIX SPIKE & MA	ATRIX SPIKE DUP	LICATE: 1631	40		163141							
			MS	MSD								
Demonstra	11-26-	2623698004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	0
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.50	0.50	100	101	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.



Project: Pace Project No.:	Plant Hammond GW 2623704	/6581										
QC Batch:	36187	Anal	Analysis Method:			SM 4500-S2 D						
QC Batch Method: SM 4500-S2 D				Analysis Description: 4500S2D Sulfide Water								
Associated Lab Sam	ples: 2623704001	, 2623704002										
METHOD BLANK:	163403			Matrix: W	/ater							
Associated Lab Sam	ples: 2623704001	, 2623704002										
			Blai	nk	Reporting							
Parameter		Units	Res	ult	Limit	MD	L	Analyzec	d Qualifier			
Sulfide		mg/L		ND	0.2	0	0.20	09/30/19 17	:04			
LABORATORY CON	ITROL SAMPLE: 1	63404										
			Spike	LC	S	LCS	%	Rec				
Param	leter	Units	Conc.	Res	sult	% Rec	Li	mits	Qualifiers			
Sulfide		mg/L	0	.5	0.45	9	0	80-120				
MATRIX SPIKE & M	ATRIX SPIKE DUPL	ICATE: 1634	05		163406							
			MS	MSD								
_		2623614004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.40	0.40	8	31 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.



Project: Plant Hammond G	GW6581						
Pace Project No.: 2623704							
QC Batch: 36102		Analysis M	ethod:	SM 5210B			
QC Batch Method: SM 5210B		Analysis D	escription:	5210B BOD, 9	5 day		
Associated Lab Samples: 26237040	01, 2623704002						
METHOD BLANK: 162918		Matri	x: Water				
Associated Lab Samples: 26237040	01, 2623704002						
		Blank	Reporting	g			
Parameter	Units	Result	Limit	MDL	Analy	zed	Qualifiers
BOD, 5 day	mg/L	NE	 D	2.0	2.0 10/02/19	14:17	1A
LABORATORY CONTROL SAMPLE:	162920						
		Calles	LCS	LCS	% Rec		
		Spike	L00	LOG	70 ILEC		
Parameter	Units	Conc.	Result	% Rec	Limits	Qua	lifiers
Parameter BOD, 5 day	Units mg/L						lifiers
		Conc.	Result	% Rec	Limits		lifiers
		Conc.	Result	% Rec	Limits		lifiers
BOD, 5 day		Conc.	Result	% Rec	Limits		lifiers
BOD, 5 day		Conc. 198	Result 205	% Rec	Limits 85-115		lifiersQualifiers

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.



Project: Plant H Pace Project No.: 262370	ammond GW 4	6581									
QC Batch: 36067			Ana	alysis Metho	od: E	EPA 300.0					
QC Batch Method: EPA 3	00.0			alysis Descr		300.0 IC An	ions				
Associated Lab Samples:	2623704001	, 2623704002									
METHOD BLANK: 162737				Matrix: V	Vater						
Associated Lab Samples:	2623704001	, 2623704002									
			BI	ank	Reporting						
Parameter		Units	Re	esult	Limit	MD	L	Analyze	d	Qualifiers	
Nitrate as N		mg/L		ND	0.05	0 0	0.0050	09/27/19 18	3:48		
Nitrite as N		mg/L		ND	0.05	0	0.011	09/27/19 18	3:48		
LABORATORY CONTROL S	SAMPLE: 1	62738									
			Spik		CS	LCS		% Rec			
Parameter		Units	Cond	c. Re	sult	% Rec		Limits	Qualifier	S	
Nitrate as N		mg/L		10	10.5	10		90-110			
Nitrite as N		mg/L		10	10.7	10	7	90-110			
MATRIX SPIKE & MATRIX S	SPIKE DUPLI	CATE: 1627	39		162740						
			MS	MSD							
		2623562005	Spike	Spike	MS	MSD	MS	MSD	% Red		Max
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Re	c % Rec	Limits	RPD	RPD Qu
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:	1	63021									
			262	3704001	Spike	MS		MS	% R	lec	
Parameter		Units	F	Result	Conc.	Result		% Rec	Lim	its	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	

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



- ,	t Hammond (GW6581									
Pace Project No.: 2623	-										
	150		Analysis I	Method	: I	EPA 350.1					
QC Batch Method: EP	A 350.1		Analysis I	Descrip	otion:	350.1 Ammo	nia				
Associated Lab Samples	26237040	001, 2623704002									
METHOD BLANK: 1632	273		Mat	rix: Wa	ater						
Associated Lab Samples	26237040	001, 2623704002									
Parameter		Units	Blank Result	F	Reporting Limit	MDL		Analyze	ed	Qualifiers	
Nitrogen, Ammonia		mg/L	N	ID	0.1	0	0.10	09/30/19 1	1:18		
LABORATORY CONTRO	L SAMPLE:	163274									
Parameter		Units	Spike Conc.	LC: Res	-	LCS % Rec		% Rec Limits	Qualit	fiers	
Nitrogen, Ammonia		mg/L	10		10.3	103		90-110			
MATRIX SPIKE SAMPLE	:	163275									
			26236980	01	Spike	MS		MS	9	6 Rec	
Parameter		Units	Result		Conc.	Result		% Rec	L	_imits	Qualifiers
Nitrogen, Ammonia		mg/L		1.4	10	1	2.0	106	6	90-110	
MATRIX SPIKE SAMPLE	:	163276									
			26236820	01	Spike	MS		MS	9	6 Rec	
Parameter		Units	Result		Conc.	Result		% Rec	L	_imits	Qualifiers
Nitrogen, Ammonia		mg/L		0.96	10	4	1.5	105		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



Project: Plant Hammond Pace Project No.: 2623704	GW6581						
QC Batch: 36222		Analysis Me	ethod:	EPA 351.2			
QC Batch Method: EPA 351.2		Analysis De	scription:	351.2 TKN			
Associated Lab Samples: 2623704	001, 2623704002						
METHOD BLANK: 163614		Matrix	: Water				
Associated Lab Samples: 2623704	001, 2623704002						
Parameter	Units	Blank Result	Reporting Limit	MDL	Analyz	ed Qua	lifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.4	0	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						
		2623680001		MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	:	2.3 10	10).5 8	32 90-1	110 M1
MATRIX SPIKE SAMPLE:	163621						
Deremeter	Units	2623680003		MS	MS % Dec	% Rec	Qualifiers
Parameter Nitrogen, Kjeldahl, Total	 mg/L	Result	Conc. 3.5 10	Result 12	% Rec	Limits	I10 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



Project: Pla	nt Hammond G	W6581										
Pace Project No.: 262	23704											
QC Batch: 5	75017		Analy	sis Metho	d:	SM 5310B						
QC Batch Method: S	M 5310B		Analy	/sis Descrij	otion:	5310B Diss	olved Org	anic Carbor	n			
Associated Lab Sample	s: 262370400	01, 2623704002										
METHOD BLANK: 312	24986			Matrix: W	ater							
Associated Lab Sample	s: 262370400	01, 2623704002										
			Blar	nk l	Reporting							
Paramete	r	Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers	,	
Dissolved Organic Carb	on	mg/L		ND	1.	0	0.50	10/02/19 15:	06			
LABORATORY CONTR	OL SAMPLE:	3124987										
_			Spike	LC	-	LCS		Rec				
Paramete	r	Units	Conc.	Res	sult	% Rec	Lir	nits	Qualifiers			
Dissolved Organic Carb	on	mg/L	2	20	19.0	9	5	90-110				
MATRIX SPIKE & MATR	RIX SPIKE DUPI	LICATE: 3124	988		3124989)						
			MS	MSD								
		2623704001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dissolved Organic Carbo	on mg/L	0.65J	20	20	19.6	19.8	9:	5 96	80-120	1	20	
MATRIX SPIKE & MATR	RIX SPIKE DUP	LICATE: 3124	990		3124991							
			MS	MSD								
_		2623708004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dissolved Organic Carbo	on mg/L	ND	20	20	19.6	19.4	9	6 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



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.



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

Pace Analytical

Required Client Information:	Required Project Information:	Invoice Information:	Page : Of V
Company: Georgia Power - Coal Combustion Residuals	siduals Report To: Joju Abraham	Attention: scsinvoices@southernco.com	
	Copy To:	Company Name:	
05 A 30		Address:	Regulatory/Agency
Email: jabraham@southernco.com	Purchase Order #: SCS10382775	Pace Quote:	
Phone: (404)506-7239 Fax:	Project Name: Plant Hammond	Pace Project Manager: belsy.mcdaniel@pacetabs.com,	State//lineation
led Due Date: Sprudered	Ś	Pace Profile #: 327 (AP) ·	
		Requested Analysis Elisted (VAN)	
	(ដទា oi	Preservatives	v v v
SAMPLE ID One Character per box. (A.Z, 0-9/) Sample Ids must be unique	Pundang Marker Pundang Marker Mater Water Marker Ma	Ample Temp AT COLLECTION SAMPLE TEMP AT COLLECTION SAMPLE TEMP AT COLLECTION Unpreserved Unpreserved NaCH + Zn Ac Mathanol Other Other Other Other Anolisasium Other Other	ammonia nitrogen, TKN, TON BOD (5-day) Oil and grease by 1664 Residual Chlorine (Y/V)
1 EB- 02	6/22/6 Set)		7
	1800 9/4/1A	1222 12 10 3 1 5 1 1 V V V V V V V V V V V	2 1 1 2
80			
4			
9			
9		1 09/24 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
U)			
STRUCTURE COMMENTER		DATE DATE ACCERTED BV//AREILIATION DATE AME	ME BAMPLE CONDITIONS
	Mpelea M udual beams	9/26/19 2055 (Muller)/Race 9/27/19 1147	
		1 5	
		AND SIGNATURE	
	PRINT Name SIGNATURE	Jolia Huskus , / Date Signed: 1	MP in Ceived c stody N) M) M) M) M) M) M) M) M) M)
JR73704			

San	ple Condition U	Inon Receipt	WO#:2623704		
Pace Analytical Client Name:	010	e/((R	PM: BM Due Date: CLIENT: GAPower-CCR	10/04	1/1:
Courier: 🗈 Fed Ex 🔲 UPS 🗌 USPS 🗍 Clien	t Commercial a	Pace Other	Proj. Due Date:		
Custody Seal on Cooler/Box Present:	Í nố Sevelsin	itact: Dyes	no Proj. Name:		
Packing Material: Bubble Wrap TBubble	Bags 🗌 Non 🖉 🗌	Other			
Thermometer Used 2/4	Type of Ice: Wet		Samples on ice, cooling process has be	egur	
Cooler Temperature	Biological Tissue is	s Frozen: Yes No Comments:	Date and Initials of person exami contents:	ning 	
Chain of Custody Present:		l.			
Chain of Custody Filled Out:		2.			
Chain of Custody Relinquished:		3.			
Sampler Name & Signature on COC:		4.			
Samples Arrived within Hold Time:		5			
Short Hold Time Analysis (<72hr):		6			
Rush Turn Around Time Requested:	□Yes ☑No □N/A	7.			
Sufficient Volume:		8	4		╢
Correct Containers Used:		9.			
-Pace Containers Used:	PYes INO IN/A				Щ
Containers Intact:	ZYes No N/A	10.			
Filtered volume received for Dissolved tests		11.			4
Sample Labels match COC:	IYes □No □N/A	12.			
-Includes date/time/ID/Analysis Matrix:	<u>W</u>				
All containers needing preservation have been checked.	Eres Ono On/A	13.			
All containers needing preservation are found to be in compliance with EPA recommendation.					
exceptions: VOA, coliform, TOO O&G WI-DRO (water)	Yes ENO	Initial when completed	Lot # of added preservative		
Samples checked for dechlorination:		14.	· · · · · · · · · · · · · · · · · · ·		Τ
Headspace in VOA Vials (>6mm):					Τ
Trip Blank Present:					Ţ
Trip Blank Custody Seals Present	□Yes □No ☑N/A	1	•		
Pace Trip Blank Lot # (if purchased):					
Client Notification/ Resolution:			Field Data Required? Y /	N	Ť
Person Contacted:	Date/	Time:		ł	
. Comments/ Resolution:					+
	······				╀
		·····			+
					+
		···			\dagger
					t
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 11, 2019

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

RE: Project: Plant Hammond GW6581 Pace Project No.: 2623706

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,

Batery Mr Damil

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.: 2623706

Atlanta Certification IDs

Ormond Beach 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

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



SAMPLE SUMMARY

Project: Plant Hammond GW6581

Pace Project No.: 2623706

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623706001	HGWC-13	Water	09/26/19 13:50	09/27/19 13:15
2623706002	MW-24d	Water	09/26/19 16:50	09/27/19 13:15
2623706003	MW-27D	Water	09/26/19 10:11	09/27/19 13:15
2623706004	MW-6	Water	09/26/19 12:29	09/27/19 13:15
2623706005	MW-7	Water	09/26/19 15:22	09/27/19 13:15
2623706006	MW-28D	Water	09/26/19 14:50	09/27/19 13:15
2623706007	MW-26D	Water	09/26/19 19:19	09/27/19 13:15



SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581

Pace Project No.: 2623706

_ab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623706001	HGWC-13	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
2623706002	MW-24d	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
623706003	MW-27D	EPA 6010	CS2	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
623706004	MW-6	EPA 6010	CS2	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
623706005	MW-7	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
623706006	MW-28D	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
623706007	MW-26D	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



Project: Plant Hammond GW6581

Pace Project No.: 2623706

Sample: HGWC-13	Lab ID:	2623706001	Collected	: 09/26/19	9 13:50	Received: 09/	27/19 13:15 N	latrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepara	ation Meth	od: EPA	3010			
Iron	1.4	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:31	7439-89-6	
Magnesium	24.4	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:31	7439-95-4	
Manganese	3.7	mg/L	0.10	0.0084	20	10/08/19 16:13	10/10/19 15:08	3 7439-96-5	
Phosphorus	0.022J	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:31	7723-14-0	N2
Potassium	5.0	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:31	7440-09-7	
Sodium	10.1	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:31	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	102	mg/L	20.0	20.0	1		10/01/19 19:04	Ļ	
Alkalinity, Total as CaCO3	102	mg/L	20.0	20.0	1		10/01/19 19:04	Ļ	
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 13:31	l	
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:45	5 18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	1.7	mg/L	1.0	0.50	1		10/02/19 17:16	6	



Project: Plant Hammond GW6581

Pace Project No.: 2623706

Sample: MW-24d	Lab ID:	2623706002	Collected	d: 09/26/1	9 16:50	Received: 09/	27/19 13:15 N	latrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepa	ration Meth	od: EPA	3010			
Iron	1.0	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:48	3 7439-89-6	
Magnesium	5.1	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:48	3 7439-95-4	
Manganese	0.72	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:48	3 7439-96-5	
Phosphorus	0.025J	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:48	3 7723-14-0	N2
Potassium	0.45J	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:48	3 7440-09-7	
Sodium	11.3	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:48	3 7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	102	mg/L	20.0	20.0	1		10/01/19 19:08	3	
Alkalinity, Total as CaCO3	102	mg/L	20.0	20.0	1		10/01/19 19:08	3	
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 14:01		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:59	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 18:37	,	



Project: Plant Hammond GW6581

Pace Project No.: 2623706

Sample: MW-27D	Lab ID:	2623706003	Collecte	d: 09/26/19	9 10:11	Received: 09/	27/19 13:15 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepa	ration Meth	od: EPA	3010			
Iron	0.015J	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:24	7439-89-6	
Magnesium	19.7	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:24	7439-95-4	
Manganese	0.058	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:24	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:24	7723-14-0	N2
Potassium	0.92J	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:24	7440-09-7	
Sodium	27.8	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:24	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	166	mg/L	20.0	20.0	1		10/01/19 19:12		
Alkalinity, Total as CaCO3	166	mg/L	20.0	20.0	1		10/01/19 19:12		
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 20:40		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:00	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 16:42		



Project: Plant Hammond GW6581

Pace Project No.: 2623706

Sample: MW-6	Lab ID:	2623706004	Collecte	d: 09/26/19	9 12:29	Received: 09/	27/19 13:15 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepa	ration Meth	od: EPA	3010			
Iron	0.51	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:27	7439-89-6	
Magnesium	14.3	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:27	7439-95-4	
Manganese	0.55	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:27	7439-96-5	
Phosphorus	0.017J	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:27	7723-14-0	N2
Potassium	1.2	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:27	7440-09-7	
Sodium	13.1	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:27	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	234	mg/L	20.0	20.0	1		10/01/19 19:16		
Alkalinity, Total as CaCO3	234	mg/L	20.0	20.0	1		10/01/19 19:16		
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 20:41		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:00	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	0.52J	mg/L	1.0	0.50	1		10/02/19 17:00		



Project: Plant Hammond GW6581

Pace Project No.: 2623706

Sample: MW-7	Lab ID:	2623706005	Collected	I: 09/26/19	9 15:22	Received: 09/	27/19 13:15 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepar	ation Meth	od: EPA	3010			
Iron	0.037J	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:44	7439-89-6	
Magnesium	9.8	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:44	7439-95-4	
Manganese	0.070	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:44	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:44	7723-14-0	N2
Potassium	0.79J	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:44	7440-09-7	
Sodium	8.2	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:44	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	113	mg/L	20.0	20.0	1		10/01/19 19:22		
Alkalinity, Total as CaCO3	113	mg/L	20.0	20.0	1		10/01/19 19:22		
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 14:02		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:01	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 18:22		



Project: Plant Hammond GW6581

Pace Project No.: 2623706

Sample: MW-28D	Lab ID:	2623706006	Collected	: 09/26/1	9 14:50	Received: 09/	27/19 13:15 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepara	ation Meth	od: EPA	3010			
Iron	0.89	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:34	7439-89-6	
Magnesium	22.5	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:34	7439-95-4	
Manganese	0.12	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:34	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:34	7723-14-0	N2
Potassium	0.99J	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:34	7440-09-7	
Sodium	9.6	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:34	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	173	mg/L	20.0	20.0	1		10/03/19 12:00		
Alkalinity, Total as CaCO3	173	mg/L	20.0	20.0	1		10/03/19 12:00		
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 14:03		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:02	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 18:08		



Project: Plant Hammond GW6581

Pace Project No.: 2623706

Sample: MW-26D	Lab ID:	2623706007	Collected	: 09/26/1	9 19:19	Received: 09/	27/19 13:15 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepara	ation Meth	od: EPA	3010			
Iron	0.40	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:51	7439-89-6	
Magnesium	15.9	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:51	7439-95-4	
Manganese	0.17	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:51	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:51	7723-14-0	N2
Potassium	2.0	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:51	7440-09-7	
Sodium	12.2	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:51	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity, Bicarbonate (CaCO3)	175	mg/L	20.0	20.0	1		10/03/19 12:13		
Alkalinity, Total as CaCO3	175	mg/L	20.0	20.0	1		10/03/19 12:13		
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 14:03		
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:03	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 18:55		



Project: Plant Hammond GW6581

Pace Project No.: 2623706

QC Batch: 576681 Analysis Method: QC Batch Method: EPA 3010

Analysis Description: 6010 MET

EPA 6010

Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005, 2623706006, 2623706007

METHOD BLANK: 3134011

Matrix: Water

Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005, 2623706006, 2623706007

		Blank	Reporting			
Parameter	Units	Result	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	

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 N	2
Potassium	mg/L	12.5	12.1	97	80-120	
Sodium	mg/L	12.5	12.3	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3134013

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	

3134014

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



QC Batch: 36284 Analysis Method: SM 2320B QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005 Metrix: Water METHOD BLANK: 163853 Matrix: Water Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005 Blank Parameter Units Result Limit MDL Analyzed Alkalinity, Total as CaCO3 mg/L ND 20.0 20.0 10/01/19 17:35	Qualifiers
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005 METHOD BLANK: 163853 Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005 Blank Reporting Parameter Units Result Limit MDL Analyzed	Qualifiers
METHOD BLANK: 163853 Matrix: Water Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005 Blank Reporting Parameter Units Result Limit MDL Analyzed	Qualifiers
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005 Blank Reporting Parameter Units Result Limit MDL Analyzed	Qualifiers
Blank Reporting Parameter Units Result Limit MDL Analyzed	Qualifiers
Parameter Units Result Limit MDL Analyzed	Qualifiers
	Qualifiers
Alkalinity, Total as CaCO3 mg/L ND 20.0 20.0 10/01/19 17:35	
LABORATORY CONTROL SAMPLE: 163854	
Spike LCS LCS % Rec	
Parameter Units Conc. Result % Rec Limits Qualif	ifiers
Alkalinity, Total as CaCO3 mg/L 100 98.0 98 85-115	
SAMPLE DUPLICATE: 163855	
2623635002 Dup Max	
Parameter Units Result Result RPD RPD C	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.



GW6581							
	Analysis M	lethod:	SM 2320B				
	Analysis D	escription:	2320B Alkalir	nity			
006, 2623706007							
	Matri	x: Water					
006, 2623706007							
	Blank	Reporting					
Units	Result	Limit	MDL		Analyz	ed	Qualifiers
mg/L	N	20	0.0	20.0	10/03/19	11:56	
164228							
	Spike	LCS	LCS	%	Rec		
Units	Conc.	Result	% Rec	Li	imits	Qual	ifiers
mg/L	100	96.0	96		85-115		
	2623706006	Dup			Max		
Units	Result	Result	RPD		RPD		Qualifiers
mg/L	17:	3 1	72	1		10	
	mg/L 164228 Units mg/L Units	Analysis M Analysis D 006, 2623706007 Matri 006, 2623706007 Blank Units Mg/L 164228 Units Conc. mg/L 100 Units Conc. mg/L Units 2623706006 Result	Analysis Method: Analysis Description: 006, 2623706007 Matrix: Water 006, 2623706007 Units Blank Reporting Result Limit mg/L ND 20 164228 Units Conc. Result mg/L 100 96.0	Analysis Method: SM 2320B Analysis Description: 2320B Alkalin 006, 2623706007 Matrix: Water Matrix Water 006, 2623706007 Blank Matrix: Water 006, 2623706007 Blank Matrix: Water 006, 2623706007 Blank Matrix: Water 006, 2623706007 Blank Result Limit MDL 006, 2623706007 Blank Reporting Units Conc. Result MDL 100 96.0 96 Units 2623706006 Dup Result RPD Units 2623706006 Dup Result RPD	Analysis Method: SM 2320B Analysis Description: 2320B Alkalinity 006, 2623706007 Matrix: Water Matrix Water 006, 2623706007 Blank Matrix Water 006, 2623706007 Blank Matrix: Water Mode MDL Units Result Limit Mg/L ND 20.0 20.0 164228 LCS LCS % Units Conc. Result % Rec L mg/L 100 96.0 96 96 Units 2623706006 Dup Result RPD	Analysis Method: SM 2320B Analysis Description: 2320B Alkalinity 006, 2623706007 Matrix: Water Matrix Water 006, 2623706007 Blank Limit MDL Analyzic Matrix: Water 006, 2623706007 Blank Reporting Units Result Limit MDL Analyzic 164228 ND 20.0 20.0 10/03/19 164228 Spike LCS LCS % Rec Units Conc. Result % Rec Limits mg/L 100 96.0 96 85-115 Units 2623706006 Dup Max RPD	Analysis Method: SM 2320B Analysis Description: 2320B Alkalinity 006, 2623706007 Matrix: Water Matrix Reporting Units Result Units Result MDL Analyzed 164228 ND Units Spike LCS LCS Model % Rec Limits Conc. Result % Rec Limits Qual mg/L 100 96.0 96 Model Result RPD Matrix Result RPD

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.



- ,	Plant Hammond G ¹ 623706	W6581										
QC Batch:	36119		Anal	ysis Metho	d:	SM 4500-P						
	SM 4500-P			, ysis Descri		4500PE Or	tho Phosph	norus				
Associated Lab Samp	les: 262370600	03, 2623706004										
METHOD BLANK: 1	63046			Matrix: W	ater							
Associated Lab Samp	les: 262370600	3, 2623706004										
			Bla		Reporting							
Parame	ter	Units	Res	ult	Limit	MD	L	Analyzed	Q.	ualifiers		
Orthophosphate as P		mg/L		ND	0.02	0	0.020 0	9/27/19 20	:37			
LABORATORY CONT	ROL SAMPLE:	163047										
			Spike	LC	s	LCS	% R	lec				
Parame	ter	Units	Conc.	Res	sult	% Rec	Lim	its	Qualifiers			
Orthophosphate as P		mg/L	0	.5	0.52	10	5	80-120				
MATRIX SPIKE & MA	TRIX SPIKE DUPI	LICATE: 1630	48		163049							
			MS	MSD								
		2623707001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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.



Project:	Plant Hammond G	W6581										
Pace Project No.:	2623706											
QC Batch:	36125		Analy	ysis Metho	d:	SM 4500-P						
QC Batch Method:	SM 4500-P		Anal	ysis Descri	ption:	4500PE Or	tho Phospł	norus				
Associated Lab Sar	mples: 26237060	01, 2623706002,	262370600	05, 262370	6006, 2623	3706007						
METHOD BLANK:	163138			Matrix: W	/ater							
Associated Lab Sar	nples: 26237060	01, 2623706002,	262370600	05, 262370	6006, 2623	3706007						
			Blai	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Orthophosphate as	Ρ	mg/L		ND	0.02	20	0.020 0	9/28/19 13	:30			
LABORATORY COI	NTROL SAMPLE:	163139										
			Spike	LC	S	LCS	% R	lec				
Paran	neter	Units	Conc.	Res	sult	% Rec	Lim	its	Qualifiers			
Orthophosphate as	Ρ	mg/L	0	.5	0.51	10	1	80-120				
MATRIX SPIKE & M	ATRIX SPIKE DUF	LICATE: 1631	40		163141							
			MS	MSD								
		2623698004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
			Opinto									
Parameter	r Units		Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual

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.



Project:	Plant Hammond G	W6581										
Pace Project No.:	2623706											
QC Batch:	36187		Anal	ysis Metho	d:	SM 4500-S	2 D					
QC Batch Method:	SM 4500-S2 D		Anal	ysis Descri	ption:	4500S2D S	ulfide Wat	er				
Associated Lab Sar	nples: 26237060	01, 2623706002,	262370600	03, 262370	6004, 2623	706005, 26	23706006	, 26237060	007			
METHOD BLANK:	163403			Matrix: W	ater							
Associated Lab Sar	nples: 26237060	01, 2623706002,	262370600	03, 262370	6004, 2623	706005, 26	23706006	, 26237060	07			
			Bla	nk	Reporting							
Parar	neter	Units	Res	ult	Limit	MD	L	Analyzec	l Qi	ualifiers		
Sulfide		mg/L		ND	0.2	0	0.20 0	9/30/19 17	:04			
LABORATORY CO	NTROL SAMPLE:	163404										
			Spike	LC	S	LCS	% F	Rec				
Parar	neter	Units	Conc.	Res	sult	% Rec	Lim	nits	Qualifiers			
Sulfide		mg/L	0	.5	0.45	9	0	80-120				
MATRIX SPIKE & N	IATRIX SPIKE DUF	PLICATE: 1634	05		163406							
			MS	MSD								
		2623614004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete		Descrit	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Paramete	· Units	Result	Conc.	00110.	Resource	Resourc	/01100	701100	Ennito	I II D		4.0.0.

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.



- ,		ammond GV	V6581										
	262370	-											
QC Batch:	57501	-			sis Metho		SM 5310B						
QC Batch Method:	SM 53	10B		Analy	sis Descri	ption:	5310B Diss	olved Org	anic Carbor	ו			
Associated Lab Sam	ples:	262370600	1, 2623706002,	262370600	3, 262370	6004, 2623	3706005, 26	23706006	6, 26237060	07			
METHOD BLANK:	312498	6			Matrix: W	ater							
Associated Lab Sam	ples:	262370600	1, 2623706002,	262370600	3, 262370	6004, 2623	3706005, 26	23706006	, 26237060	07			
				Blan	ık	Reporting							
Param	eter		Units	Resu	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Dissolved Organic C	arbon		mg/L		ND	1	.0	0.50 1	10/02/19 15:	:06			
LABORATORY CON	ITROL S	AMPLE: (3124987										
				Spike	LC		LCS	% F					
Param	eter		Units	Conc.	Res	sult	% Rec	Lin	nits	Qualifiers	_		
Dissolved Organic C	arbon		mg/L	2	0	19.0	9	5	90-110				
MATRIX SPIKE & M	ATRIX S	PIKE DUPL	ICATE: 3124	988		312498	9						
				MS	MSD								
			2623704001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dissolved Organic Ca	arbon	mg/L	0.65J	20	20	19.6	19.8	95	5 96	80-120	1	20	
MATRIX SPIKE & M	ATRIX S	PIKE DUPL	ICATE: 3124	990		312499	1						
				MS	MSD								
			2623708004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dissolved Organic Ca	arbon	mg/L	ND	20	20	19.6	19.4	96	6 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.



QUALIFIERS

Project: Plant Hammond GW6581

Pace Project No.: 2623706

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

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581

Pace Project No.: 2623706

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623706001	HGWC-13	EPA 3010	576681	EPA 6010	576722
2623706002	MW-24d	EPA 3010	576681	EPA 6010	576722
2623706003	MW-27D	EPA 3010	576681	EPA 6010	576722
2623706004	MW-6	EPA 3010	576681	EPA 6010	576722
2623706005	MW-7	EPA 3010	576681	EPA 6010	576722
2623706006	MW-28D	EPA 3010	576681	EPA 6010	576722
2623706007	MW-26D	EPA 3010	576681	EPA 6010	576722
2623706001	HGWC-13	SM 2320B	36284		
2623706002	MW-24d	SM 2320B	36284		
2623706003	MW-27D	SM 2320B	36284		
2623706004	MW-6	SM 2320B	36284		
2623706005	MW-7	SM 2320B	36284		
2623706006	MW-28D	SM 2320B	36366		
2623706007	MW-26D	SM 2320B	36366		
2623706001	HGWC-13	SM 4500-P	36125		
2623706002	MW-24d	SM 4500-P	36125		
2623706003	MW-27D	SM 4500-P	36119		
2623706004	MW-6	SM 4500-P	36119		
2623706005	MW-7	SM 4500-P	36125		
2623706006	MW-28D	SM 4500-P	36125		
2623706007	MW-26D	SM 4500-P	36125		
2623706001	HGWC-13	SM 4500-S2 D	36187		
2623706002	MW-24d	SM 4500-S2 D	36187		
2623706003	MW-27D	SM 4500-S2 D	36187		
2623706004	MW-6	SM 4500-S2 D	36187		
2623706005	MW-7	SM 4500-S2 D	36187		
2623706006	MW-28D	SM 4500-S2 D	36187		
2623706007	MW-26D	SM 4500-S2 D	36187		
2623706001	HGWC-13	SM 5310B	575017		
2623706002	MW-24d	SM 5310B	575017		
2623706003	MW-27D	SM 5310B	575017		
2623706004	MW-6	SM 5310B	575017		
2623706005	MW-7	SM 5310B	575017		
2623706006	MW-28D	SM 5310B	575017		
2623706007	MW-26D	SM 5310B	575017		



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Email:	jabraham@southernco.com	Purchase Order #: SCS10382775		Pace Quote:													
Phone:	(404)506-7239 Fax:	Project Name: Plant Hammond		Pace Project Manager:	t Manager:	betsv.mcdaniel@pacelabs.com	niel@pace	labs.con					15	State // Location	A LEVE	THE REAL PROPERTY.	
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A	ample Condition l	Jpon Receipt
<i>Pace Analytical</i> Client Nam	e: GABy	<u>re/((R</u> Project #
ourier: 1) Fed Ex 🗌 UPS 🗌 USPS 🗍 Ci racking #:	lient Commercial	Proj. Due Date:
ustody Seal on Cooler/Box Present:	es 🗌 nõ Ševals įr	ntact: Dyes no Proj. Name:
acking Material: Bubble Wrap	n ble Bags 🔲 Nor 🖉 🗌	Other
hermometer Used 2/4	Type of Ice: Wet	
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ooler Temperature		contents:
hain of Custody Present:	Ares DNo DN/A	I.
hain of Custody Filled Out:		
hain of Custody Relinquished:		3.
ampler Name & Signature on COC:		4
amples Arrived within Hold Time:	ØYes □No □N/A	
hort Hold Time Analysis (<72hr):		6.
Rush Turn Around Time Requested:	UYes ONO ON/A	7.
Sufficient Volume:		8. 4
Correct Containers Used:		9.
-Pace Containers Used:	Ves INO IN/A	
Containers Intact:		10.
Filtered volume received for Dissolved tests	VYes INO DAVA	11. D-phos + DOC field fiftered
Sample Labels match COC:		
-Includes date/time/ID/Analysis Matrix:_ All containers needing preservation have been checked		
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All containers needing preservation are found to be i compliance with EPA recommendation.		
exceptions: VOA. coliform, TOC. 08G/WI-DRO (water)	Dres ENo	Initial when Lot # of added completed preservative
Samples checked for dechlorination:	· /	
Headspace in VOA Vials (>6mm):	Yes □No 1241/A □Yes □No 121/A	
Trip Blank Present:	. /	1
Trip Blank Custody Seals Present	□Yes □No 2Ñ/A	
Pace Trip Blank Lot # (if purchased):		
Client Notification/ Resolution:		Field Data Required? Y / N
Person Contacted:		/Time:
Comments/ Resolution:		
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Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

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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.: 2623752

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,

Kein Hung

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.: 2623752

Atlanta Certification IDs

Ormond Beach 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

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



SAMPLE SUMMARY

Project: Plant Hammond Pace Project No.: 2623752

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623752001	HGWC-9	Water	09/27/19 13:20	09/30/19 12:39
2623752002	HGWC-10	Water	09/27/19 10:39	09/30/19 12:39
2623752003	MW-19	Water	09/27/19 13:30	09/30/19 12:39
2623752004	MW-25d	Water	09/27/19 10:00	09/30/19 12:39
2623752005	HGWC-12	Water	09/27/19 11:20	09/30/19 12:39
2623752006	HGWC-11	Water	09/27/19 12:48	09/30/19 12:39



SAMPLE ANALYTE COUNT

Project: Plant Hammond

2

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623752001	HGWC-9	EPA 6010	LEC	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
623752002	HGWC-10	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-CI 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
623752003	MW-19	EPA 6010	CS2, 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-CI 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



SAMPLE ANALYTE COUNT

Project:Plant HammondPace Project No.:2623752

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623752004	MW-25d	EPA 6010	LEC	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
2623752005	HGWC-12	EPA 6010	CS2, LEC	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
2623752006	HGWC-11	EPA 6010	LEC	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



Project: Plant Hammond

Pace Project No.: 2623752

Sample: HGWC-9	Lab ID:	2623752001	Collecte	d: 09/27/19	9 13:20	Received: 09/	30/19 12:39 N	latrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepa	ration Meth	od: EPA	3010			
Iron	0.32	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:23	7439-89-6	
Magnesium	18.0	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:23	7439-95-4	
Manganese	0.43	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:23	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:23	7723-14-0	N2
Potassium	3.2	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:23	7440-09-7	
Sodium	13.4	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:23	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	171	mg/L	20.0	20.0	1		10/04/19 12:36	;	
Alkalinity, Total as CaCO3	171	mg/L	20.0	20.0	1		10/04/19 12:36	i	
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:39	1	H3
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:04	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/04/19 09:11		



Project: Plant Hammond

Pace Project No.: 2623752

Sample: HGWC-10	Lab ID:	2623752002	Collected	: 09/27/1	9 10:39	Received: 09/	30/19 12:39 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepara	ation Meth	od: EPA	3010			
Iron	ND	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:09	7439-89-6	
Magnesium	12.2	mg/L	0.50	0.084	1	10/08/19 14:47			
Manganese	2.1	mg/L	0.050	0.0042	10	10/08/19 14:47			NO
Phosphorus Reteasium	ND 1.7	mg/L	0.045 1.0	0.014 0.15	1	10/08/19 14:47 10/08/19 14:47			N2
Potassium Sodium	11.9	mg/L mg/L	2.0	0.13	1 1	10/08/19 14:47			
Tot Hardness asCaCO3 (SM 2340B	501000	ug/L	32100	5060	10		10/10/19 13:36	1440 20 0	
6020B MET ICPMS	Analytical	Method: EPA	6020B Prepa	ration Me	thod: EF	PA 3005A			
Copper	ND	mg/L	1.2	0.0093	50	10/03/19 17:28	10/05/19 15:48	7440-50-8	
Zinc	ND	mg/L	0.50	0.077	50	10/03/19 17:28	10/05/19 15:48	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Prepa	ration Me	thod: EP	A 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	10/04/19 08:48	10/04/19 13:28	7439-97-6	
HEM, Oil and Grease	Analytical	Method: EPA	1664B						
Oil and Grease	ND	mg/L	4.9	4.9	1		10/03/19 17:00		
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity, Bicarbonate (CaCO3)	248	mg/L	20.0	20.0	1		10/04/19 12:40		
Alkalinity, Total as CaCO3	248	mg/L	20.0	20.0	1		10/04/19 12:40		
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	626	mg/L	10.0	10.0	1		10/04/19 20:01		
2540D Total Suspended Solids	Analytical	Method: SM 2	540D						
Total Suspended Solids	ND	mg/L	5.0	5.0	1		10/02/19 18:44		
4500CL G Chlorine, Residual	Analytical	Method: SM 4	500-CI G						
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		10/01/19 12:31	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:40		H3
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:05	18496-25-8	
5210B BOD, 5 day	Analytical	Method: SM 5	210B Prepar	ation Met	hod: SM	5210B			
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/02/19 08:33	10/07/19 11:00		H3
Total Organic Nitrogen Calc.	Analytical	Method: TKN-	NH3 Calculat	ion					
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

REPORT OF LABORATORY ANALYSIS

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Project: Plant Hammond

Pace Project No.: 2623752

Sample: HGWC-10	Lab ID:	2623752002	Collected	l: 09/27/19	9 10:39	Received: 09/	/30/19 12:39 Ma	atrix: 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	0.029J	mg/L	0.050	0.0050	1		10/01/19 11:55	14797-55-8	НЗ
Nitrite as N	ND	mg/L	0.050	0.011	1		10/01/19 11:55	14797-65-0	H3
350.1 Ammonia	Analytical	Method: EPA 3	350.1						
Nitrogen, Ammonia	ND	mg/L	0.10	0.10	1		10/02/19 09:24	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA 3	351.2 Prepa	ration Meth	od: EP	A 351.2			
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	10/02/19 08:00	10/02/19 11:36	7727-37-9	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	0.63J	mg/L	1.0	0.50	1		10/04/19 07:45		



Project: Plant Hammond

Pace Project No.: 2623752

Sample: MW-19	Lab ID: 2	2623752003	Collecte	d: 09/27/1	9 13:30	Received: 09/	30/19 12:39 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical N	/lethod: EPA	6010 Prepa	ration Meth	nod: EPA	3010			
Iron	0.10	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:27	7439-89-6	
Magnesium	12.3	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:27		
Manganese	3.2	mg/L	0.050	0.0042	10	10/08/19 14:47			
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47			N2
Potassium	3.6	mg/L	1.0	0.15	1	10/08/19 14:47			
Sodium	8.4	mg/L	2.0	0.27	1	10/08/19 14:47		7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	299000	ug/L	3210	506	1	10/08/19 14:47	10/09/19 21:27		
6020B MET ICPMS	Analytical N	/lethod: EPA	6020B Prep	aration Me	thod: EF	PA 3005A			
Copper	ND	mg/L	0.025	0.00019	1	10/03/19 17:28	10/05/19 16:05		_
Zinc	0.0055J	mg/L	0.010	0.0015	1	10/03/19 17:28	10/05/19 16:05	7440-66-6	В
7470 Mercury	Analytical N	lethod: EPA	7470A Prep	aration Me	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	10/04/19 08:48	10/04/19 13:37	7439-97-6	
HEM, Oil and Grease	Analytical N	/lethod: EPA	1664B						
Oil and Grease	ND	mg/L	5.0	5.0	1		10/03/19 17:00		
2320B Alkalinity	Analytical N	/lethod: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	75.0	mg/L	20.0	20.0	1		10/04/19 12:47		
Alkalinity, Total as CaCO3	75.0	mg/L	20.0	20.0	1		10/04/19 12:47		
2540C Total Dissolved Solids	Analytical N	/lethod: SM 2	540C						
Total Dissolved Solids	420	mg/L	10.0	10.0	1		10/04/19 20:01		
2540D Total Suspended Solids	Analytical M	/lethod: SM 2	540D						
Total Suspended Solids	ND	mg/L	5.0	5.0	1		10/02/19 18:44		
4500CL G Chlorine, Residual	Analytical N	/lethod: SM 4	500-CI G						
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		10/01/19 12:32	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical N	/lethod: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:40		H3
4500S2D Sulfide Water	Analytical N	/lethod: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:05	18496-25-8	
5210B BOD, 5 day	Analytical N	/lethod: SM 5	210B Prepa	aration Met	hod: SM	5210B			
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/02/19 08:33	10/07/19 11:01		H3
Total Organic Nitrogen Calc.	Analytical N	/lethod: TKN-	NH3 Calcula	ation					
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

REPORT OF LABORATORY ANALYSIS

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Project: F	Plant Hammond
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Pace Project No.: 2623752

Sample: MW-19	Lab ID:	2623752003	Collected	d: 09/27/19	9 13:30	Received: 09/	/30/19 12:39 Ma	atrix: 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	0.039J	mg/L	0.050	0.0050	1		10/01/19 12:59	14797-55-8	НЗ
Nitrite as N	0.032J	mg/L	0.050	0.011	1		10/01/19 12:59	14797-65-0	H3
350.1 Ammonia	Analytical	Method: EPA 3	350.1						
Nitrogen, Ammonia	1.0	mg/L	0.10	0.10	1		10/02/19 09:25	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA 3	351.2 Prepa	ration Meth	od: EP	A 351.2			
Nitrogen, Kjeldahl, Total	1.2	mg/L	0.40	0.40	1	10/02/19 08:00	10/02/19 11:38	7727-37-9	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	0.79J	mg/L	1.0	0.50	1		10/04/19 09:27		



Project: Plant Hammond

Pace Project No.: 2623752

Sample: MW-25d	Lab ID:	2623752004	Collecte	d: 09/27/1	9 10:00	Received: 09/	'30/19 12:39 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA 6	6010 Prepa	ration Meth	od: EPA	3010			
Iron	0.22	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 20:50	7439-89-6	
Magnesium	8.5	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 20:50	7439-95-4	
Manganese	0.040	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 20:50	7439-96-5	
Phosphorus	0.019J	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 20:50	7723-14-0	N2
Potassium	0.69J	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 20:50	7440-09-7	
Sodium	118	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 20:50	7440-23-5	M1
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	255	mg/L	20.0	20.0	1		10/04/19 12:55		
Alkalinity, Total as CaCO3	255	mg/L	20.0	20.0	1		10/04/19 12:55		
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:41		H3
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	0.49	mg/L	0.20	0.20	1		10/03/19 14:06	18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	1.8	mg/L	1.0	0.50	1		10/04/19 07:02		



Project: Plant Hammond

Pace Project No.: 2623752

Sample: HGWC-12	Lab ID:	2623752005	Collected	: 09/27/1	9 11:20	Received: 09/	30/19 12:39 N	fatrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepara	ation Meth	od: EPA	3010			
Iron	0.11	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:13	3 7439-89-6	
Magnesium	15.6	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:13	3 7439-95-4	
Manganese	1.9	mg/L	0.050	0.0042	10	10/08/19 14:47	10/10/19 13:49	9 7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:13	3 7723-14-0	N2
Potassium	7.5	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:13	3 7440-09-7	
Sodium	10.5	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:13	3 7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	157	mg/L	20.0	20.0	1		10/04/19 13:03	3	
Alkalinity, Total as CaCO3	157	mg/L	20.0	20.0	1		10/04/19 13:03	3	
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:42	2	H3
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:0	7 18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	0.76J	mg/L	1.0	0.50	1		10/04/19 08:4	1	



Project: Plant Hammond

Pace Project No.: 2623752

Sample: HGWC-11	Lab ID:	2623752006	Collecte	d: 09/27/19	9 12:48	Received: 09/	30/19 12:39 N	Aatrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA	6010 Prepa	ration Meth	od: EPA	3010			
Iron	ND	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:18	3 7439-89-6	
Magnesium	15.5	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:18	3 7439-95-4	
Manganese	0.017	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:18	3 7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:18	3 7723-14-0	N2
Potassium	2.5	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:18	3 7440-09-7	
Sodium	6.7	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:18	3 7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B						
Alkalinity,Bicarbonate (CaCO3)	71.0	mg/L	20.0	20.0	1		10/04/19 13:12	2	
Alkalinity, Total as CaCO3	71.0	mg/L	20.0	20.0	1		10/04/19 13:12	2	
4500PE Ortho Phosphorus	Analytical	Method: SM 4	500-P						
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:43	3	H3
4500S2D Sulfide Water	Analytical	Method: SM 4	500-S2 D						
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:08	3 18496-25-8	
5310B Dissolved Organic Carbon	Analytical	Method: SM 5	310B						
Dissolved Organic Carbon	0.92J	mg/L	1.0	0.50	1		10/04/19 08:55	5	



Project:	Plant H	Hammond											
Pace Project No .:	26237	52											
QC Batch:	3647	4		Anal	ysis Metho	d:	EPA 7470A						
QC Batch Method:	EPA	7470A		Analy	ysis Descri	ption:	7470 Mercu	ry					
Associated Lab San	nples:	2623752002	2, 2623752003										
METHOD BLANK:	16476	9			Matrix: W	/ater							
Associated Lab San	nples:	2623752002	2, 2623752003										
				Blai	nk	Reporting							
Paran	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Mercury			mg/L		ND	0.0005	0 0.	00014 1	10/04/19 13:	23			
LABORATORY COM	NTROL	SAMPLE: 1	164770										
				Spike	LC	-	LCS	% F					
Paran	neter		Units	Conc.	Res	sult	% Rec	Lin	nits (Qualifiers			
Mercury			mg/L	0.002	25	0.0026	10	2	80-120				
MATRIX SPIKE & M	IATRIX	SPIKE DUPL	ICATE: 1647	71		164772							
				MS	MSD								
			2623752002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury		mg/L	ND	0.0025	0.0025	0.0024	0.0024	95	5 96	75-125	1	20	
SAMPLE DUPLICA	TE: 16	64773											
				262352		Dup			Max				
Paran	neter		Units	Res	ult	Result)	RPD	Qualif	iers		
Mercury			mg/L		ND	N	D		20	0	_		

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Pace Project No.: 2623752

OC Batch: 576632

QC Batch:	5766	32	Analysis Method:	EPA 6010
QC Batch Method:	EPA	3010	Analysis Description:	6010 MET
Associated Lab Sam	ples:	2623752001, 262375	2002, 2623752003, 2623752004, 262	23752005, 2623752006

METHOD BLANK: 3133743

Matrix: Water

Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

		Blank	Reporting			
Parameter	Units	Result	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	
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
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 S	PIKE DUPL	ICATE: 3133	745		3133746						
		0000750004	MS	MSD		MOD		MOD	0/ D		N
Parameter	Units	2623752004 Result	Spike Conc.	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
Tot Hardness asCaCO3 (SM 2340B	ug/L	107000	82700	82700	196000	191000	107	102	75-125	2	20

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Project:	Plant I	Hammond											
Pace Project No.:	26237	52											
QC Batch:	3643	4		Anal	ysis Metho	od: E	PA 6020B						
QC Batch Method:	EPA	3005A		Analy	ysis Descr	iption: 6	020B MET						
Associated Lab Sar	nples:	2623752002	2, 2623752003										
METHOD BLANK:	16454	7			Matrix: V	Vater							
Associated Lab Sar	mples:	2623752002	2, 2623752003										
				Blai		Reporting							
Parar	neter		Units	Res	ult	Limit	MD	L	Analyzed	d Qu	alifiers		
Copper			mg/L		ND	0.025	-	00019	10/05/19 14				
Zinc			mg/L		0.013	0.010) (0.0015	10/05/19 14	1:53			
LABORATORY CO	NTROL	SAMPLE: ^	164548										
				Spike	L	CS	LCS	%	Rec				
Parar	neter		Units	Conc.	Re	sult	% Rec	Li	mits	Qualifiers	_		
Copper			mg/L	0		0.099	9		80-120				
Zinc			mg/L	0	.1	0.11	10	9	80-120				
MATRIX SPIKE & N	IATRIX	SPIKE DUPL	ICATE: 1645	49		164550							
				MS	MSD								
_			2623793002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	- · ·
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Copper		mg/L	ND	0.1	0.1	0.10	0.099	10			5		
Zinc		mg/L	0.0032J	0.1	0.1	0.11	0.10	10)3 98	8 75-125	5	20	

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-)	ant Hammond 23752							
QC Batch:	86370		Analysis Me	thod: I	EPA 1664B			
QC Batch Method:	EPA 1664B		Analysis De	scription:	1664 HEM, Oil a	and Grease		
Associated Lab Sample	es: 26237520	002, 2623752003						
METHOD BLANK: 16	4248		Matrix	: Water				
Associated Lab Sample	es: 26237520	002, 2623752003						
Paramete	er	Units	Blank Result	Reporting Limit	MDL	Analyze	d Qualifier	S
Oil and Grease		mg/L	ND	5.	0 5	5.0 10/03/19 0	8:00	
LABORATORY CONTR	ROL SAMPLE:	164249						
Paramete	er	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
Oil and Grease		mg/L	40	35.3	88	78-114		
MATRIX SPIKE SAMP	_E:	164250						
			2623564001		MS	MS	% Rec	
Paramete	er	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Oil and Grease		mg/L	64	4.7 44.4	101	82	2 78-114	
SAMPLE DUPLICATE:	164251							
			2623579001	Dup		Max		
Paramete	er	Units	Result	Result	RPD	RPD	Qualifiers	
Oil and Grease		mg/L	ND	N	<u></u> כ		75	

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Project:	Plant Hammond								
Pace Project No.:	2623752								
QC Batch:	36486		Analysis M	ethod:	SM 2320B				
QC Batch Method:	SM 2320B		Analysis De	escription:	2320B Alkalin	ity			
Associated Lab Sam	ples: 26237520	01, 2623752002,	2623752003, 262	23752004, 2623	3752005, 2623	3752006	6		
METHOD BLANK:	164845		Matrix	x: Water					
Associated Lab Sam	ples: 26237520	01, 2623752002,	2623752003, 262	23752004, 2623	3752005, 2623	3752006	5		
			Blank	Reporting					
Deven	eter	Units	Result	Limit	MDL		Analyz	ed	Qualifiers
Param		erine							
		mg/L	ND	20	0.0	20.0	10/04/19	12:28	
Alkalinity, Total as Ca	aCO3	mg/L	NE	20	0.0	20.0	10/04/19 ⁻	12:28	
Alkalinity, Total as Ca	aCO3							12:28	
Alkalinity, Total as Ca LABORATORY CON Param	aCO3	mg/L	Spike Conc.	LCS Result	LCS % Rec	%	10/04/19 · Rec nits	12:28 Quali	ifiers
Alkalinity, Total as Ca LABORATORY CON Param	aCO3 TROL SAMPLE: eter	mg/L 164846	Spike	LCS	LCS	%	Rec		ifiers
Alkalinity, Total as Ca	aCO3 TROL SAMPLE: eter	mg/L 164846 Units	Spike Conc.	LCS Result	LCS % Rec	%	Rec nits		ifiers
Alkalinity, Total as Ca LABORATORY CON Param	aCO3 ITROL SAMPLE: eter aCO3	mg/L 164846 Units	Spike Conc.	LCS Result	LCS % Rec	%	Rec nits		ifiers
Alkalinity, Total as Ca LABORATORY CON Param Alkalinity, Total as Ca	aCO3 ITROL SAMPLE: eter aCO3	mg/L 164846 Units	Spike Conc.	LCS Result	LCS % Rec	%	Rec nits		ifiers
Alkalinity, Total as Ca LABORATORY CON Param Alkalinity, Total as Ca	aCO3 ITROL SAMPLE: eter aCO3 E: 164847	mg/L 164846 Units	Spike Conc. 100	LCS Result 102	LCS % Rec	%	Rec nits 85-115	Quali	ifiers Qualifiers
Alkalinity, Total as Ca LABORATORY CON Param Alkalinity, Total as Ca SAMPLE DUPLICAT	aCO3 ITROL SAMPLE: eter aCO3 E: 164847 eter	mg/L 164846 Units mg/L	Spike Conc. 100 2623698004	LCS Result 102 Dup Result	LCS % Rec 102	%	Rec nits 85-115	Quali	

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Project: Pace Project No.:	Plant Hammond 2623752								
QC Batch:	36519		Analysis M	lethod:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	issolved Solids			
Associated Lab Sar	mples: 26237520	02, 2623752003							
LABORATORY CO	NTROL SAMPLE:	165036							
			Spike	LCS	LCS	% Rec			
Parar	meter	Units	Conc.	Result	% Rec	Limits	Qu	alifiers	
Total Dissolved Sol	ids	mg/L	400	409	102	84-108			
SAMPLE DUPLICA	TE: 165037								
			2623748003	- 1		Max			
Para	meter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Sol	ids	mg/L	44	2 4	158	4	10		
SAMPLE DUPLICA	TE: 165038								
			2623793003	Dup		Max			
Para	meter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Sol	ids	mg/L	47	5 4	197	5	10		

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Project: Plant Hammond Pace Project No.: 2623752						
QC Batch: 36383		Analysis M	lethod:	SM 2540D		
QC Batch Method: SM 2540D		Analysis D	escription:	2540D Total S	Suspended Solid	S
Associated Lab Samples: 26237520	02, 2623752003					
METHOD BLANK: 164324		Matri	ix: Water			
Associated Lab Samples: 26237520	02, 2623752003					
Parameter	Units	Blank Result	Reportino Limit) MDL	Analyz	zed Qualifiers
Total Suspended Solids	mg/L	N	D	5.0	5.0 10/02/19	18:43
LABORATORY CONTROL SAMPLE:	164325					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	99.0	99	90-110	
SAMPLE DUPLICATE: 164326						
_		2623856001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Total Suspended Solids	mg/L	N	D	ND		10
SAMPLE DUPLICATE: 164327						
Parameter	Units	2623677002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L					

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Project:Plant HammondPace Project No.:2623752							
QC Batch: 36248		Analysis M	ethod:	SM 4500-CI G	3		
QC Batch Method: SM 4500-Cl G		Analysis De	escription:	4500CL G Ch	lorine,	Total Residual	
Associated Lab Samples: 26237520	002, 2623752003						
METHOD BLANK: 163705		Matri	x: Water				
Associated Lab Samples: 26237520	002, 2623752003						
		Blank	Reporting				
Parameter	Units	Result	Limit	MDL		Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	NE)	0.1	0.1	10/01/19 12:26	H6
LABORATORY CONTROL SAMPLE:	163706	Chika			0/	Baa	
LABORATORY CONTROL SAMPLE: Parameter	163706 Units	Spike Conc.	LCS Result	LCS % Rec		Rec mits Qua	alifiers
		•					alifiers
Parameter	Units	Conc.		% Rec		mits Qua	alifiers
Parameter Chlorine, Total Residual	Units	Conc.		% Rec		mits Qua	alifiers
Parameter Chlorine, Total Residual	Units	<u>Conc.</u> 1	Result 1	% Rec		mits Qua 86-116 H6	alifiers

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Project:	Plant Hammond											
Pace Project No.:	2623752											
QC Batch:	36245		Analy	ysis Metho	d:	SM 4500-P						
QC Batch Method:	SM 4500-P		Analy	ysis Descri	ption:	4500PE Or	tho Phosp	horus				
Associated Lab Sar	nples: 26237520	001, 2623752002,	262375200)3, 262375	2004, 2623	752005, 26	23752006	i				
METHOD BLANK:	163688			Matrix: W	/ater							
Associated Lab Sar	nples: 26237520	001, 2623752002,	262375200	03, 262375	2004, 2623	752005, 26	23752006	;				
			Blar	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	MD	L	Analyzed	l Qı	ualifiers		
Orthophosphate as	Р	mg/L		ND	0.02	0	0.020	10/01/19 15	:34			
LABORATORY COI	NTROL SAMPLE:	163689										
			Spike	LC	S	LCS	% F	Rec				
Paran	neter	Units	Conc.	Res	sult	% Rec	Lin	nits	Qualifiers			
Orthophosphate as	Р	mg/L	0	.5	0.52	10	3	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DUI	PLICATE: 1636	90		163691							
			MS	MSD								
		2623750001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	s Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual

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Project:	Plant Hammond											
Pace Project No.:	2623752											
QC Batch:	36416		Analy	ysis Metho	d: s	SM 4500-S2	2 D					
QC Batch Method:	SM 4500-S2 D		Analy	ysis Descri	ption: 4	1500S2D S	ulfide Wat	er				
Associated Lab Sar	nples: 26237520	001, 2623752002,	262375200)3, 262375	2004, 2623	752005, 26	23752006					
METHOD BLANK:	164448			Matrix: W	ater							
Associated Lab Sar	nples: 2623752	001, 2623752002,	262375200)3, 262375	2004, 2623	752005, 26	23752006					
			Blai	nk	Reporting							
Parar	neter	Units	Res	ult	Limit	MD	L	Analyzec	l Q	ualifiers		
Sulfide		mg/L		ND	0.2	0	0.20 1	0/03/19 13	:40			
LABORATORY CO	NTROL SAMPLE:	164449										
			Spike	LC	s	LCS	% F	Rec				
Parar	neter	Units	Conc.	Res	sult	% Rec	Lim	its	Qualifiers			
Sulfide		mg/L	0	.5	0.43	8	7	80-120				
MATRIX SPIKE & N	IATRIX SPIKE DU	PLICATE: 1644	50		164451							
			MS	MSD								
		2623698001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r Unit	s Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Sulfide	mg/	L ND	0.5	0.5	ND	ND	17	15	5 30-129		10	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.



Project: Plant Hammond Pace Project No.: 2623752								
QC Batch: 36267		Analysis M	lethod:	SM 5210B				
QC Batch Method: SM 5210B		Analysis D		5210B BOD, 5	5 day			
Associated Lab Samples: 26237520	002, 2623752003		·		·			
METHOD BLANK: 163798		Matri	x: Water					
Associated Lab Samples: 26237520	002, 2623752003							
		Blank	Reporting]				
Parameter	Units	Result	Limit	MDL		Analyz	zed	Qualifiers
BOD, 5 day	mg/L	N	D .	2.0	2.0	10/07/19	10:57	
BOD, 5 day LABORATORY CONTROL SAMPLE:	mg/L	N			2.0	10/07/19	10:57	
LABORATORY CONTROL SAMPLE:	163800	Spike	LCS	LCS	%	Rec		
-					%			ifiers
LABORATORY CONTROL SAMPLE:	163800	Spike	LCS	LCS	%	Rec		ifiers
LABORATORY CONTROL SAMPLE: Parameter	163800 Units	Spike Conc.	LCS Result	LCS % Rec	%	Rec		lifiers
LABORATORY CONTROL SAMPLE: Parameter BOD, 5 day	163800 Units	Spike Conc.	LCS Result 190	LCS % Rec	%	Rec		lifiers
LABORATORY CONTROL SAMPLE: Parameter BOD, 5 day	163800 Units	Spike Conc. 198	LCS Result 190	LCS % Rec	%	Rec mits 85-115	Qual	lifiers Qualifiers

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.



Project:	Plant Ham	nmond											
Pace Project No.:	2623752												
QC Batch:	36211			Analy	sis Metho	d: E	PA 300.0						
QC Batch Method:	EPA 300	0.0		Analy	sis Descri	ption: 3	00.0 IC An	ions					
Associated Lab San	nples: 26	623752002	2, 2623752003										
METHOD BLANK:	163581				Matrix: W	ater							
Associated Lab San	nples: 26	623752002	2, 2623752003										
				Blan	k	Reporting							
Param	neter		Units	Resu	ult	Limit	MDI		Analyzed	Qu	ualifiers		
Nitrate as N			mg/L		ND	0.050) (.0050	10/01/19 11:	:13			
Nitrite as N			mg/L		ND	0.050)	0.011	10/01/19 11:	:13			
	NTROL SAI	MPLE: 1	63582										
				Spike	LC	S	LCS	% F	Rec				
Paran	neter		Units	Conc.	Res	sult	% Rec	Lin	nits	Qualifiers			
Nitrate as N			mg/L	1	0	10.6	10	5	90-110		_		
Nitrite as N			mg/L	1	0	10.9	109	Ð	90-110				
MATRIX SPIKE & M	IATRIX SPI		CATE: 1635	83		163584							
				MS	MSD								
			2623752002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrate as N		mg/L	0.029J	10	10	10.2	10.4	102	2 103	90-110	1	15	H3
Nitrite as N		mg/L	ND	10	10	10.3	10.3	103	3 103	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.



Project: Plant Hamn	nond						
Pace Project No.: 2623752							
QC Batch: 36308		Analysis Me	thod:	EPA 350.1			
QC Batch Method: EPA 350.1	1	Analysis Des	scription:	350.1 Ammonia			
Associated Lab Samples: 262	23752002, 2623752003						
METHOD BLANK: 163917		Matrix:	Water				
Associated Lab Samples: 262	23752002, 2623752003						
Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers	
Nitrogen, Ammonia	mg/L	ND	0.1	0 0.1	0 10/02/19 09	:16	
LABORATORY CONTROL SAM	PLE: 163918						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
Nitrogen, Ammonia	mg/L	10	10.2	102	90-110		
MATRIX SPIKE SAMPLE:	163919						
		2623752002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Nitrogen, Ammonia	mg/L	١	ND 10	10.5	104	90-110	
MATRIX SPIKE SAMPLE:	163920						
Parameter	Units	2623805001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	1.3 10	11.6	103	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.



Project: Plant Hammond Pace Project No.: 2623752	1						
QC Batch: 36290		Analysis M	ethod:	EPA 351.2			
QC Batch Method: EPA 351.2		Analysis D		351.2 TKN			
Associated Lab Samples: 262375	2002, 2623752003						
METHOD BLANK: 163897		Matri	x: Water				
Associated Lab Samples: 262375	2002, 2623752003						
		Blank	Reporting				
Parameter	Units	Result	Limit	MDL	Analyze	ed Qualifi	ers
				_			
Nitrogen, Kjeldahl, Total	mg/L	NE	0.4	0 (0.40 10/02/19 1	11:29	
	_	NE	0.4	0 (0.40 10/02/19 1	11:29	
	_					11:29	
LABORATORY CONTROL SAMPLE	: 163898	Spike	LCS	LCS	% Rec		
LABORATORY CONTROL SAMPLE Parameter	: 163898	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
LABORATORY CONTROL SAMPLE	: 163898	Spike	LCS	LCS	% Rec		
LABORATORY CONTROL SAMPLE Parameter	: 163898	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits		
LABORATORY CONTROL SAMPLE Parameter Nitrogen, Kjeldahl, Total	: 163898 	Spike Conc.	LCS Result 9.4	LCS % Rec	% Rec Limits		
LABORATORY CONTROL SAMPLE Parameter Nitrogen, Kjeldahl, Total	: 163898 	Spike Conc. 10	LCS Result 9.4	LCS % Rec 94	% Rec Limits 90-110	Qualifiers	Qualifiers

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.



Project:	Plant Hammond											
Pace Project No.: 2	2623752											
QC Batch:	575346		Analy	sis Metho	d: s	SM 5310B						
QC Batch Method:	SM 5310B		Analy	sis Descri	ption:	5310B Disso	olved Org	anic Carbo	n			
Associated Lab Samp	oles: 26237520	01, 2623752002,	262375200	3, 262375	2004, 2623	752005, 262	23752006	6				
METHOD BLANK:	3126906			Matrix: W	ater							
Associated Lab Samp	oles: 26237520	01, 2623752002,	262375200	3, 262375	2004, 2623	752005, 262	23752006	6				
			Blar	ık	Reporting							
Parame	eter	Units	Resu	ult	Limit	MDL		Analyzed	l Qu	ualifiers		
Dissolved Organic Ca	arbon	mg/L		ND	1.	0	0.50	10/04/19 06	:33			
LABORATORY CON	TROL SAMPLE:	3126907										
			Spike	LC	S	LCS	%	Rec				
Parame	eter	Units	Conc.	Res	sult	% Rec	Lir	nits	Qualifiers			
Dissolved Organic Ca			_				-					
Biobonioù organio or	arbon	mg/L	2	0	18.9	95	5	90-110				
MATRIX SPIKE & MA				0	18.9		5	90-110				
				0 MSD			5	90-110				
			908				MS	90-110 MSD	% Rec		Max	
		2623752004	908 MS	MSD	3126909	1			% Rec Limits	RPD	Max RPD	Qual

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.



QUALIFIERS

Project: Plant Hammond Pace Project No.: 2623752

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

- 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.
- 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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	Plant Hammond
Pace Project No.:	2623752

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623752001	HGWC-9	EPA 3010	576632	EPA 6010	576717
2623752002	HGWC-10	EPA 3010	576632	EPA 6010	576717
2623752003	MW-19	EPA 3010	576632	EPA 6010	576717
2623752004	MW-25d	EPA 3010	576632	EPA 6010	576717
2623752005	HGWC-12	EPA 3010	576632	EPA 6010	576717
2623752006	HGWC-11	EPA 3010	576632	EPA 6010	576717
2623752002	HGWC-10	EPA 3005A	36434	EPA 6020B	36455
2623752003	MW-19	EPA 3005A	36434	EPA 6020B	36455
2623752002	HGWC-10	EPA 7470A	36474	EPA 7470A	36493
2623752003	MW-19	EPA 7470A	36474	EPA 7470A	36493
2623752002	HGWC-10	EPA 1664B	36370		
2623752003	MW-19	EPA 1664B	36370		
2623752001	HGWC-9	SM 2320B	36486		
2623752002	HGWC-10	SM 2320B	36486		
2623752003	MW-19	SM 2320B	36486		
2623752004	MW-25d	SM 2320B	36486		
2623752005	HGWC-12	SM 2320B	36486		
2623752006	HGWC-11	SM 2320B	36486		
2623752002	HGWC-10	SM 2540C	36519		
2623752003	MW-19	SM 2540C	36519		
2623752002	HGWC-10	SM 2540D	36383		
2623752003	MW-19	SM 2540D	36383		
2623752002	HGWC-10	SM 4500-CI G	36248		
2623752003	MW-19	SM 4500-CI G	36248		
2623752001	HGWC-9	SM 4500-P	36245		
2623752002	HGWC-10	SM 4500-P	36245		
2623752003	MW-19	SM 4500-P	36245		
2623752004	MW-25d	SM 4500-P	36245		
2623752005	HGWC-12	SM 4500-P	36245		
2623752006	HGWC-11	SM 4500-P	36245		
2623752001	HGWC-9	SM 4500-S2 D	36416		
2623752002	HGWC-10	SM 4500-S2 D	36416		
2623752003	MW-19	SM 4500-S2 D	36416		
2623752004	MW-25d	SM 4500-S2 D	36416		
2623752005	HGWC-12	SM 4500-S2 D	36416		
2623752006	HGWC-11	SM 4500-S2 D	36416		
2623752002	HGWC-10	SM 5210B	36267	SM 5210B	36539
2623752003	MW-19	SM 5210B	36267	SM 5210B	36539
2623752002	HGWC-10	TKN-NH3 Calculation	36472		
2623752003	MW-19	TKN-NH3 Calculation	36472		
2623752002	HGWC-10	EPA 300.0	36211		
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	Plant Hammond
Pace Project No .:	2623752

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623752002	HGWC-10	EPA 350.1	36308		
2623752003	MW-19	EPA 350.1	36308		
2623752002	HGWC-10	EPA 351.2	36290	EPA 351.2	36306
2623752003	MW-19	EPA 351.2	36290	EPA 351.2	36306
2623752001	HGWC-9	SM 5310B	575346		
2623752002	HGWC-10	SM 5310B	575346		
2623752003	MW-19	SM 5310B	575346		
2623752004	MW-25d	SM 5310B	575346		
2623752005	HGWC-12	SM 5310B	575346		
2623752006	HGWC-11	SM 5310B	575346		

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Email:	jabraham@southemco.com	Purchase Order #:	der e:	SCS10382775	192775				Pace Quote:	huote:										-									
Phone:	(404)506-7239 Fax:	Project Name	6	19	puo				Pace F	roject	Pace Project Manager:	- 	belsy.n	nodani	el@pa	betsy.mcdaniel@pacelabs.com	l E 8			幽				STATO	State/(Location)	5			_
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Pace Analytical

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S	ample Conditic	on Upon Rece	ipt
Face Analytical Client Nam	e: <u>67</u>	Powere	Project #
Courier: Fed Ex UPS USPS CI	ient 🛛 Commercia	Pace Othe	
Custody Seal on Cooler/Box Present:	es 🗌 no Sea	als intact:ye	PM: BM Due Date: 10/07/19 S CLIENT: GAPower-CCR
Packing Material: Dubble Wrap			CLIENT: CHrower-Cox
Thermometer Used83		et Blue None	Samples on ice, cooling/process has begun
Cooler Temperature <u>2.9</u> Temp should be above freezing to 6°C	Biological Tissu	Le is Frozen: Yes Comments:	No Date and Initials of person examining contents: <u>7/30/19</u>
Chain of Custody Present:	-EYes DNo DN		
Chain of Custody Filled Out:			
Chain of Custody Relinquished:			
Sampler Name & Signature on COC:			
Samples Arrived within Hold Time:			2-P, Res. d, NOn out & hold
Short Hold Time Analysis (<72hr):			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Rush Turn Around Time Requested:			
Sufficient Volume:	-Etes Ono On		
Correct Containers Used:			
-Pace Containers Used:			
Containers Intact:		I/A 10.	
Filtered volume received for Dissolved tests		I/A 11.	
Sample Labels match COC:		I/A 12.	
-Includes date/time/ID/Analysis Matrix:	ω		
All containers needing preservation have been checked.		I/A 13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	-EYes DNO DN	I/A	
exceptions: VOA, coliform, TOC, Osc, WI-DRO (water)	- EYes ONo	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:			
Headspace in VOA Vials (>6mm):			
Trip Blank Present:			
Trip Blank Custody Seals Present	□Yes □No 28		
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Resolution:			Field Data Required? Y / N
Person Contacted:	Dat	te/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 08, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2623745

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.

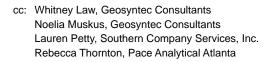
If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Batery Mr Damil

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

Enclosures







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

CERTIFICATIONS

Project: Plant Hammond Pace Project No.: 2623745

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



SAMPLE SUMMARY

Project: Plant Hammond

Pace Project No.: 2623745

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623745001	PMW-01	Water	09/27/19 15:48	09/30/19 12:39
2623745002	PMW-02	Water	09/27/19 15:06	09/30/19 12:39



SAMPLE ANALYTE COUNT

Project:Plant HammondPace Project No.:2623745

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2623745001	PMW-01	EPA 6020B	CSW	3
		EPA 300.0	MWB	1
2623745002	PMW-02	EPA 6020B	CSW	3
		EPA 300.0	MWB	1



Project: Plant Hammond

Pace Project No.: 2623745

Sample: PMW-01	Lab ID:	2623745001	Collecte	d: 09/27/19	9 15:48	Received: 09/	30/19 12:39 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Prep	paration Met	hod: E	PA 3005A			
Arsenic	0.30	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 15:08	7440-38-2	
Boron	2.3	mg/L	0.20	0.025	5	10/03/19 17:28	10/07/19 14:19	7440-42-8	
Molybdenum	0.0086J	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 15:08	7439-98-7	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Sulfate	557	mg/L	20.0	0.34	20		10/07/19 14:40	14808-79-8	M6



Project: Plant Hammond

Pace Project No.: 2623745

Sample: PMW-02	Lab ID:	2623745002	Collecte	d: 09/27/19	9 15:06	Received: 09/	'30/19 12:39 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Prep	paration Met	hod: E	PA 3005A			
Arsenic	0.99	mg/L	0.025	0.0018	5	10/03/19 17:28	10/07/19 14:25	7440-38-2	
Boron	2.5	mg/L	0.20	0.025	5	10/03/19 17:28	10/07/19 14:25	7440-42-8	
Molybdenum	0.083	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 15:14	7439-98-7	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Sulfate	347	mg/L	20.0	0.34	20		10/07/19 15:01	14808-79-8	



QC Batch: 36434	Analysis M	lethod:	EPA 6020B			
QC Batch Method: EPA 3005A	Analysis D		6020B MET			
Associated Lab Samples: 2623745001, 26237450	002					
METHOD BLANK: 164547	Matri	x: Water				
Associated Lab Samples: 2623745001, 26237450	002					
Parameter Units	Blank Result	Reporting Limit	MDL	Analyz	ed Qu	alifiers
Arsenic mg/L	NI	0.00	50 0.000	35 10/05/19	14:53	
Boron mg/L	N	O.04	40 0.004	10/05/19	14:53	
Molybdenum mg/L	N	D 0.0	10 0.000	95 10/05/19	14:53	
LABORATORY CONTROL SAMPLE: 164548						
	Spike	LCS	LCS	% Rec		
Parameter Units	Conc.	Result	% Rec	Limits	Qualifiers	
Arsenic mg/L	0.1	0.10	100	80-120		_
Boron mg/L	1	1.0	104	80-120		
Molybdenum mg/L	0.1	0.10	101	80-120		

MATRIX SPIKE & MATRIX SI	PIKE DUPL	ICATE: 1645	49		164550							
			MS	MSD								
		2623793002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	4	20	
Boron	mg/L	0.025J	1	1	1.1	1.0	103	100	75-125	4	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	106	103	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.



Project:	Plant H	Hammond											
Pace Project No .:	26237	45											
QC Batch:	3654	8		Analy	ysis Method	d:	EPA 300.0						
QC Batch Method:	EPA	300.0		Analy	ysis Descrij	ption:	300.0 IC An	ions					
Associated Lab San	nples:	2623745001	, 2623745002										
METHOD BLANK:	16513	3			Matrix: W	ater							
Associated Lab San	nples:	2623745001	, 2623745002										
				Blai	nk l	Reporting							
Paran	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Sulfate			mg/L		ND	1	.0	0.017 1	0/07/19 12:	57			
LABORATORY COM	NTROL	SAMPLE: 1	65134										
_				Spike	LC	-	LCS	% R					
Paran	neter		Units	Conc.	Res	sult	% Rec	Lim	its (Qualifiers	_		
Sulfate			mg/L	1	0	10.3	10	3	90-110				
MATRIX SPIKE & M	IATRIX	SPIKE DUPLI	CATE: 1651	35		165136							
				MS	MSD								
			2623738001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Sulfate		mg/L	ND	200	200	250	248	102	101	90-110	1	15	
MATRIX SPIKE SAI	MPLE:	1	65137										
				2623	745001	Spike	MS		MS	% Rec	;		
Paran	neter		Units	Re	sult	Conc.	Result	9	6 Rec	Limits		Qualif	iers
Sulfate			mg/L		557	200		717	80	90	-110 M	6	

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.



QUALIFIERS

Project: Plant Hammond Pace Project No.: 2623745

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

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:Plant HammondPace Project No.:2623745

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623745001 2623745002	PMW-01 PMW-02	EPA 3005A EPA 3005A	36434 36434	EPA 6020B EPA 6020B	36455 36455
2623745001 2623745002	PMW-01 PMW-02	EPA 300.0 EPA 300.0	36548 36548		

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Sa	mple Condition	Upon Recei	pt
Face Analytical Client Name	: GIA	Powere	Project #
Courier: Fed Ex UPS USPS Clie Tracking #:	ent 🛛 Commercial ,	Pace Other	•
Custody Seal on Cooler/Box Present:	; 🗌 no Seals	intact: ves	PM: BM Due Date: 10/07/19 CLIENT: GAPower-CCR
Packing Material: Bubble Wrap Bubble			CLIENT: OHFOWER-UCK
Thermometer Used	Type of Ice:	·	Samples on ice, cooling process has begun
Cooler Temperature 2:9	Biological Tissue		Date and Initials of person examining
Temp should be above freezing to 6°C		Comments:	contents: <u>9/30/19</u> /1/
Chain of Custody Present:		1.	~
Chain of Custody Filled Out:		2.	
Chain of Custody Relinquished:	Yes No N/A	3.	
Sampler Name & Signature on COC:		4.	
Samples Arrived within Hold Time:		5.	
Short Hold Time Analysis (<72hr):		6.	
Rush Turn Around Time Requested:		7.	
Sufficient Volume:		8.	
Correct Containers Used:	✓ Yes □No □N/A	9.	
-Pace Containers Used:			
Containers Intact:		10.	
Filtered volume received for Dissolved tests		11.	
Sample Labels match COC:		12.	
-Includes date/time/ID/Analysis Matrix:	$\underline{\omega}$		
All containers needing preservation have been checked.		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 ENo	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:		14.	
Headspace in VOA Vials (>6mm):			
Trip Blank Present:		16.	
Trip Blank Custody Seals Present		•	
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Resolution: Person Contacted:	Date/	Time:	Field Data Required? Y / N
Comments/ Resolution:			
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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)