SEMIANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT

GEORGIA POWER COMPANY

PLANT YATES

Ash Ponds 3, A, B, and B'

December 12, 2019

Prepared By:

ATLANTIC COAST CONSULTING, INC.

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This 2019 Second *Semi-Annual Period Remedy Selection and Design Progress Report, Georgia Power Company – Plant Yates, Ash Pond 3, A, B, and B',* has been prepared in accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule, 40 CFR § 257.97(a), and Georgia EPD Rule 391-3-4-.10(6)(a).

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1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (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 or The Rule), this Semiannual Remedy Selection and Design Progress Report (Semiannual Progress Report) has been prepared for Plant Yates, Ash Ponds 3, A, B, and B' pursuant to 40 CFR § 257.97(a) and Georgia EPD Rule 391-3-4-.10(6)(a). The Semiannual Progress Report was prepared to document activities conducted in the second half of 2019 in support of the previously submitted Assessment of Corrective Measures (ACM) Report. As required by the rules, this semiannual progress report describes the progress made in selecting and designing a remedy.

On June 12, 2019, Atlantic Coast Consulting, Inc. (ACC) completed, on behalf of Georgia Power Company (GPC), an ACM to address the occurrence of beryllium in groundwater at statistically significant levels (SSL). The ACM was placed 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 remedies presented in the ACM in order to identify an appropriate remedy, or combination of remedies, as soon as feasible. Since the completion of the ACM Report in June 2019, cobalt was also identified in groundwater at an SSL above the groundwater protection standard. The cobalt results were documented in the 2019 First Semiannual Groundwater Monitoring and Corrective Action Report and documented in a notification dated August 15, 2019. The current SSLs for beryllium and cobalt at YGWC-33S are provided in Table 1, Appendix IV Statistically Significant Levels.

As discussed in the ACM, the following corrective measures are potentially feasible for use at the site:

1. Geochemical Manipulation (In-Situ Injection)
2. Hydraulic Containment (Pump and Treat)
3. In Situ Stabilization/Solidification (ISS)
4. Monitored Natural Attenuation (MNA)
5. Permeable Reactive Barrier
6. Phytoremediation
7. Subsurface Vertical Barrier Walls

Data obtained during on-site investigation to evaluate corrective action alternatives will be included in the Annual Groundwater Monitoring and Corrective Action Report as required by 40 CFR § 257.90(e).

2.0 SUMMARY OF WORK COMPLETED

2.1 Nature and Extent Delineation

Groundwater monitoring activities have been performed for Ash Pond 3, A, B, and B' since June 2016 pursuant to detection monitoring and assessment monitoring programs required by 40 CFR § 257.94 and 40 CFR § 257.95, respectively. Following the first detection monitoring event in October 2017, statistically significant increases (SSIs) of Appendix III parameters were noted. The Appendix III SSIs initiated assessment monitoring for Appendix IV constituents. Statistical analysis of the June and October 2018 analytical data identified an SSL for beryllium in YGWC-33S, and GPC initiated an ACM on January 13, 2019. Statistical analysis of data collected in April 2019 and reported in the August 2019 semiannual groundwater monitoring report also identified cobalt as an SSL at YGWC-33S.

Downgradient horizontal and vertical delineation wells (PZ-35 and YAMW-1, respectively) have been established to delineate the downgradient extent of SSLs. Existing groundwater monitoring network locations for Ash Ponds 3, A, B, and B' and Ash Pond 2, provide additional downgradient data. The SSLs at YGWC-33S are horizontally and vertically delineated at the site.

2.2 Summary of Corrective Measures

The closure of Ash Pond 3, A, B, and B' by excavation and consolidation 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 the SSL of beryllium 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 for beryllium is provided in Table 2, Remedy Evaluation Summary; the following provides a brief description of each corrective measure being screened. An ACM evaluation for the cobalt SSL will be incorporated into the next Semiannual Remedy Selection Update Report.

Table 1, Summary of Activity, presents a summary of activities that have been completed for each potential remedy during the previous semi-annual period:

2.3 Field Investigation and Data Collection

Additional data collection, data analysis, and site-specific evaluation were performed during the second half of 2019 at Ash Ponds 3, A, B, and B' to refine the Conceptual Site Model (CSM) and to further evaluate the feasibility of each corrective measure presented herein such that an appropriate groundwater corrective measure may be selected. To further refine the CSM, additional data was also collected at R6 CCR Landfill, which is adjacent to Ash Ponds 3, A, B, and B'. Data collected are highlighted as follows.

- Collected a comprehensive suite of geochemical analytes, including: cations (aluminum, calcium, iron, magnesium, manganese, potassium, and sodium), anions (bicarbonate, carbonate, chloride, fluoride, nitrate, sulfate, and sulfide), ortho phosphorus, ferrous/ferric iron, and total organic carbon (TOC) from the entire AP-3, A, B, and B' monitoring network, including the location of statistical exceedances (YGWC-33S), horizonal extent well (PZ-35), and vertical extent well (YAMW-1). The groundwater monitoring locations are shown on Figure 1, Well Location Map.
- Collected geochemical data to evaluate groundwater parameter concentrations relative to NPDES limits and wastewater treatment capabilities.
- Reviewed preliminary data for potential source of acidity (e.g. iron sulfide versus aluminum sulfate), progress towards understanding potential chemical treatment options.
- Logged continuous hourly water level data in wells YGWA-21I, YGWC-23S, YGWC-33S, YGWC-36, and PZ-37.
- Collected and analyzed samples from two delineation wells (YAMW-1 and PZ-35) on September 26, 2019 for beryllium and cobalt (to verify limited extent of SSL exceedances, plus Appendix III and other Appendix IV constituents detected during assessment monitoring (antimony, barium, cadmium, lead, lithium, selenium, and thallium).

Laboratory analytical reports and field sampling data collected during the second half of 2019 are provided in Appendix A, Laboratory Analytical Reports and Field Sampling Data. Table 3, Summary of Recent Activity, presents a summary of activities that have been completed for each potential remedy during the second half of 2019. Table 4, Summary of Laboratory Analytical Data, summarizes the laboratory data included in Appendix A.

3.0 PLANNED ACTIVITIES & ANTICIPATED SCHEDULE

As part of the ongoing closure of Ash Pond 3, A, B, and B' dewatering has been initiated. A drainage channel has been constructed between the unit and R6 CCR Landfill to allow for the dewatering of the unit. During pond closure, temporary and permanent changes (e.g., dewatering and relocation of material) may occur that will need to be considered as part of remedy selection. GPC proactively initiated adaptive site management, as outlined in the ACM Report (ACC, 2019), 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. Once sufficient data become available to arrive at a focused number of corrective measures or a combination of corrective measures that would provide an effective groundwater remedy, necessary steps will be taken to implement a remedy for the AMA in accordance with 40 CFR § 257.98.

The following activities are planned for the upcoming semi-annual period (first half of 2020):

- Collect and analyze aquifer solids for similar analytes to groundwater and perform XRD analysis for mineralogy to assist in understanding the type of geochemical amendments that might be useful for attenuation of relevant constituents.
- Resample relevant monitoring and delineation wells for additional characterization evaluation parameters by June 30, 2020. Also collect groundwater samples for specific analytes applicable to surface water discharge criteria (i.e. consider NPDES permit requirements). Multiple data sets will be needed to assess temporal variations in conditions.
- Sample delineation locations for Appendix III and other Appendix IV constituents detected during assessment monitoring.
- Perform geochemical assessment of groundwater characteristics in the vicinity of YGWC-33S.
- Additional hydraulic conductivity testing of relevant monitoring wells and delineation wells to further characterize the groundwater flow system.

GPC will include future semiannual ACM progress reports in routine groundwater monitoring reports to document 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). Record keeping, notifications, and publicly accessible internet site requirements for the semiannual ACM progress reports will be provided in accordance with 40 CFR § 257.105(h)(12), 257.106(h)(9), and 257.107(h)(9), respectively.

TABLES

Atlantic Coast Consulting, Inc.

Table 1
Appendix IV Statistically Significant Levels
Plant Yates AP-3/A/B/B'

Constituent	Well	Upper Confidence Limit	Lower Confidence Limit	MCL
Beryllium	YGWC-33S	0.019	0.014	0.004
Cobalt	YGWC-33S	0.027	0.014	0.013*

Notes:

1. Units are milligrams per liter
2. MCL = maximum contaminant level
3. * No MCL established for cobalt; site background is referenced.
4. Data are from 2019 Groundwater Monitoring and Corrective Action Report.

Table 2
Remedy Evaluation Summary
Plant Yates AP-3/A/B/B'

Corrective Measure	Description	Ease of Implementation	Performance	Potential Impacts	Reliability
		40 CFR 257.96(c)(1)	40 CFR 257.96(c)(1)	40 CFR 257.96(c)(1)	40 CFR 257.96(c)(1)
Geochemical Manipulation (In Situ Injection)	Injection of a chemical or organic substrate to alter geochemical conditions to those more favorable for stabilization of beryllium. In this case an injection that would increase the pH to the 6-8 range is desirable.	This process is not substantially limited by implementation. Bench testing and pilot testing can be used to optimize implementation.	This process has the potential to alter conditions rapidly but requires ongoing monitoring to ensure conditions remain favorable.	Non-hazardous chemicals used for pH adjustment will not create undesirable byproducts. High pH conditions (> 10) must be avoided due to increased solubility of beryllium at higher pH levels.	This process will likely have overall reliability in achieving GWPS goals when adequate volume and subsurface distribution are achieved. Ongoing monitoring is necessary to ensure favorable conditions are maintained once achieved.
Hydraulic Containment (Pump and Treat)	Combines a groundwater extraction system with a surface treatment system to remove target analytes from the subsurface and/or to control/prevent constituent migration.	Relative ease in implementation compared to other technologies.	Groundwater Pump & Treat is an effective corrective measure for dissolved constituents provided regular maintenance is performed throughout the operational life. Not typically immediately effective for trace level metals. Rebounding can occur as water levels return to normal once the pumping system is turned off post-remediation. Generally, requires disposal of treated water and sludges.	Groundwater Pump & Treat is more effective with constituents that are easily oxidized (low boiling point) and less effective with inorganic compounds (metals).	This technology provides moderate reliability by hydraulically controlling migration of the beryllium groundwater plume.
In-Situ Stabilization/Solidification	In situ stabilization is achieved by creating reactive zones in the subsurface through chemical injection to intercept constituents and permanently immobilize or degrade them into harmless end products. In-situ solidification is the process by which constituent mobility in a solid matrix is decreased through physical and/or chemical means. Grout or other chemical additives are mixed with aquifer materials to reduce permeability. The resulting lower aquifer permeability limits the flow of impacted groundwater.	Relative ease in implementation compared to other technologies; however, stabilization is likely not suitable due to high percentage of fine-grained materials in aquifer.	Performance would need to be assessed through pilot testing. May need to be used in conjunction with an additional technology. This treatment may reduce the permeability of the aquifer with precipitation of beryllium hydroxides.	Treatment may result in the stabilization of beryllium, however, increases in the solubility of non-target metals need to be considered. Can result in undesirably high pH levels if geochemical buffering system is not maintained.	The reliability of this technology is limited by the ability to distribute media used to solidify/stabilize in heterogeneous porous media. Fine-grained materials limit viability of stabilization.
Monitored Natural Attenuation	A remedial solution that takes advantage of natural attenuation processes to attenuate constituents in soil and groundwater. This option can meet the GWPS given sufficient time and favorable conditions.	This process is not limited by implementation.	This process provides ongoing effectiveness and is well documented as an effective measure for remediating groundwater	This process is effective in reducing toxicity, mobility, and concentrations of beryllium via natural processes.	This process will likely have overall reliability in achieving GWPS goals where impacted area remains internal to the site and is adequately monitored.
Permeable Reactive Barrier	A permeable reactive barrier is a zone of reactive material that extends below the water table to intercept and treat groundwater.	Depth to bedrock may make this technology challenging to implement.	This technology may have a limited reactive lifespan and is only effective for specific constituents. Marginally effective over long periods of time without replacement of PRB material. The approach is expected to achieve GWPS for both constituents as impacted groundwater passes through the reactive barrier.	This technology may reduce the toxicity, mobility or volume of metals in groundwater through precipitation of the metal(s) as oxides in the reactive media.	This technology may not provide reliability in the site-specific lithology due to difficulty in interception groundwater flow though fractured bedrock.
Phytoremediation	Phytoremediation is the use of plants to remove, transfer or stabilize constituents in soil or groundwater. This technology can meet the GWPS for low level metal concentrations present in shallow groundwater.	The depth of the treatment zone is limited with this technology.	May be directly effective by hyperaccumulation of some metals, however phytoaccumulation is directly related to the plant species. Beryllium may need to be addressed by a method that does not involve direct uptake of impacted groundwater (i.e. traditional phytoremediation). An alternative method such as a TreeWell® system may need to be considered.	This technology is expected to marginally reduce the mobility or volume of inorganic constituents with the uptake of beryllium in the root system of the plant. Alternatively, plant root systems may be used to alter flow hydraulics and direct groundwater through a treatment media.	The presence of impacted groundwater below typical root zones and the lack of a readily identified beryllium hyperaccumulating plant species would need to be addressed for phytoremediation to be a reliable technology.
Subsurface Vertical Barrier Walls	Used to physically control the migration of impacted groundwater. They may be used to either directly contain impacted groundwater by isolating it or to manipulate the flow direction of groundwater.	Ideally the lower depth would achieve a low permeability zone. This may not be viable given the relatively deeply fractured nature of bedrock at the facility.	May need to be used in conjunction with an additional technology such as a permeable reactive barrier or pump-and-treat.	Potential mounding of groundwater, creating possible changes in flow direction or daylighting of seepage.	The reliability of this technology is limited by the ability to manage changes in the flow direction and hydraulic head of groundwater.

Table 2
Remedy Evaluation Summary
Plant Yates AP-3/A/B/B'

Corrective Measure	Begin/Complete	Institutional Requirements	Other Env or Public Health Requirements	Relative Costs
	40 CFR 257.96(c)(2)	**40 CFR 257.96(c)(3)**	**40 CFR 257.96(c)(3)**	
Geochemical Manipulation (In Situ Injection)	Can begin immediately upon completion of pilot testing and/or bench scale testing, which may take up to 24 months. Long-term monitoring and reporting likely required.	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 waterbodies, there currently appear to be no potential receptors downgradient of the units. Following installation, the remedy is passive.	Moderate costs are associated with this technology.
Hydraulic Containment (Pump and Treat)	Time needed to model and design may take up to 24 months; variable time for construction depending on scale, generally can be accomplished in 6 months.	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 if groundwater conditions are above regulatory standards for unrestricted use.	Based on downgradient sampling results near adjacent waterbodies, there currently are no complete receptor pathways downgradient of the units. Above-ground treatment components may need to be present for an extended period, and generating residuals requiring management and disposal.	High costs are associated with this technology (O&M and groundwater disposal).
In-Situ Stabilization/Solidification	Time needed to model and design may take up to 24 months; variable time for construction depending on scale, generally can be accomplished relatively quickly between 6 and 12 months. Solidification is likely not suitable due to high percentage of fine-grained materials in aquifer.	Deed restrictions may be necessary for groundwater areas downgradient of the stabilized and/or solidified areas. No other institutional requirements are expected at this time.	None expected at this point. Based on downgradient sampling results near adjacent waterbodies, there currently appear to be no potential receptors downgradient of the unit. Following implementation of ISS, this source control remedy is passive, does not create carbon emissions, and preserves groundwater resources.	Moderate costs are associated with this technology (repeat injections if there is a rebound in concentrations).
Monitored Natural Attenuation	Can begin immediately. Long-term monitoring and reporting likely required.	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 waterbodies, there currently are no complete receptor pathways downgradient of the units.	Relatively lower capital costs are associated with this technology.
Permeable Reactive Barrier	Time needed to model and design may take up to 24 months; variable time for construction depending on scale, generally can be accomplished in 6 to 12 months.	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 waterbodies, there currently are no complete receptor pathways downgradient of the unit. Following installation, the remedy is passive. However, certain treatment media have the potential to mobilize naturally occurring constituents downgradient of the PRB.	High capital costs are associated with this technology.
Phytoremediation	Time needed to model and design may take up to 6 months. Pilot testing may be required, which could take up to three years. Depending on the number of required units, the installation effort is expected to last several weeks. Full hydraulic capture/control is expected approximately three years after planting.	Deed restrictions may be necessary for groundwater areas upgradient of the phytoremediation area or *TreeWell®* system. No other institutional requirements are expected at this time.	None expected at this point. Based on downgradient sampling results near adjacent waterbodies, there currently are no complete receptor pathways downgradient of the units. Innovative and green technology may be positively received by various stakeholders. Following installation, the remedy is passive and does not require external energy.	Relatively lower costs are associated with this technology. May require periodic harvesting and disposal of plant species.
Subsurface Vertical Barrier Walls	Time needed to model and design may take up to 24 months. Variable time for construction depending on scale, generally can be accomplished relatively quickly between 6 and 12 months.	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 waterbodies, there currently appears to be no potential receptors downgradient of the unit. Due to the need for groundwater extraction associated with barrier walls, above-ground treatment components may need to be present for an extended period, creating carbon emissions and generating residuals requiring management and disposal	High capital costs are associated with this technology.

Table 3
Summary of Recent Activity
Plant Yates AP-3/A/B/B'

Remedial Alternative	Data Collected/Actions Completed	Locations Sampled	Applicability & Rationale	Comments/Planned Actions
Geochemical Manipulation (In-Situ Injection)	Collected a comprehensive suite of geochemical analytes, including: cations (aluminum, calcium, iron, magnesium, manganese, potassium, and sodium), anions (bicarbonate, carbonate, chloride, fluoride, nitrate, sulfate, and sulfide), ortho phosphorus, sulfide, ferrous/ferric iron, and TOC, to evaluate occurrence and distribution of target chemical constituents in groundwater and to evaluate attenuation mechanisms in the aquifer. Reviewed preliminary data for potential source of acidity (e.g. iron sulfide versus aluminum sulfate), progress towards understanding potential chemical treatment options. Continuous water level monitoring with data loggers in selected wells to evaluate subsurface dynamics related to closure activities.	AP-3, A, B, and B': YGWA-4I, YGWA-5I, YGWA-5D, YGWA-17S, YGWA-18S, YGWA-18I, YGWA-20S, YGWA-21I, YGWC-23S, YGWC-24S, YGWC-33S, YGWC-36, PZ-35, and YAMW-1 R6 CCR Landfill: YGWA-39, YGWA-40, YGWC-38, YGWC-41, YGWC-42, and YGWC-43	Obtain a baseline of current geochemical conditions. Observe the effects of dewatering activities. Further assess correlation between declining water level and lowering of pH observed during preparation of ACM. Data may be used to develop bench-scale testing plan (i.e. treatability studies).	Collect and analyze aquifer solids for similar analytes as groundwater and perform XRD analysis for mineralogy. Assess the lateral extent of low pH groundwater in the vicinity of YGWC-33S. Refine the extent of the potential attenuation area. Identify suitable methods for increasing pH and alkalinity levels. Evaluate ways to chemically reduce elevated levels of sulfate. Bench-scale testing of impacted groundwater to determine quantity of reagent needed to raise pH levels to background levels and attenuate beryllium and cobalt in groundwater by fixation onto aquifer solids Collect and analyze aquifer solids by sequential extraction procedure for evaluation of aquifer attenuation capacity for beryllium and cobalt and assess constituent mobility and stability.
Hydraulic Containment (Pump and Treat)	Collected a comprehensive suite of geochemical analytes, including: cations (aluminum, calcium, iron, magnesium, manganese, potassium, and sodium), anions (bicarbonate, carbonate, chloride, fluoride, nitrate, sulfate, and sulfide), ortho phosphorus, sulfide, ferrous/ferric iron, and TOC, to evaluate occurrence and distribution of target chemical constituents in groundwater and to evaluate attenuation mechanisms in the aquifer. Reviewed preliminary data for potential source of acidity (e.g. iron sulfide versus aluminum sulfate), progress towards understanding potential chemical treatment options. Continuous water level monitoring with data loggers in selected wells to evaluate subsurface dynamics related to closure activities. Collected data to evaluate groundwater parameter concentrations relative to NPDES limits and wastewater treatment capabilities.	AP-3, A, B, and B': YGWA-4I, YGWA-5I, YGWA-5D, YGWA-17S, YGWA-18S, YGWA-18I, YGWA-20S, YGWA-21I, YGWC-23S, YGWC-24S, YGWC-33S, YGWC-36, PZ-35, and YAMW-1 R6 CCR Landfill: YGWA-39, YGWA-40, YGWC-38, YGWC-41, YGWC-42, and YGWC-43	Obtain a baseline of current geochemical conditions. Observe the effects of ongoing dewatering activities. Further assess correlation between declining water level and lowering of pH observed during preparation of ACM. Data may be used to develop bench-scale testing plan (i.e. water treatment studies).	Collect and analyze groundwater samples for additional analytes applicable to discharge criteria. Perform additional aquifer testing to evaluate hydraulic characteristics. Collect and analyze aquifer solids by sequential extraction procedure for evaluation of aquifer attenuation capacity for beryllium and cobalt and assess constituent mobility and stability.
In Situ Stabilization/Solidification (ISS)	Collected a comprehensive suite of geochemical analytes, including: cations (aluminum, calcium, iron, magnesium, manganese, potassium, and sodium), anions (bicarbonate, carbonate, chloride, fluoride, nitrate, sulfate, and sulfide), ortho phosphorus, sulfide, ferrous/ferric iron, and TOC, to evaluate occurrence and distribution of target chemical constituents in groundwater and to evaluate attenuation mechanisms in the aquifer. Reviewed preliminary data for potential source of acidity (e.g. iron sulfide versus aluminum sulfate), progress towards understanding potential chemical treatment options. Continuous water level monitoring with data loggers in selected wells to evaluate subsurface dynamics related to closure activities.	AP-3, A, B, and B': YGWA-4I, YGWA-5I, YGWA-5D, YGWA-17S, YGWA-18S, YGWA-18I, YGWA-20S, YGWA-21I, YGWC-23S, YGWC-24S, YGWC-33S, YGWC-36, PZ-35, and YAMW-1 R6 CCR Landfill: YGWA-39, YGWA-40, YGWC-38, YGWC-41, YGWC-42, and YGWC-43	Obtain a baseline of current geochemical conditions. Observe the effects of dewatering activities. Further assess correlation between declining water level and lowering of pH observed during preparation of ACM. Data may be used to develop bench-scale testing plan (i.e. treatability studies for solidification media).	Availability of solidification media compatible with acidic conditions needs to be reviewed. Assess the lateral extent of low pH groundwater in the vicinity of YGWC-33S. Refine the extent of the potential attenuation area. Method for controlling bypass through fractured bedrock should be reviewed. Perform additional aquifer testing to evaluate subsurface hydraulic characteristics. Collect and analyze aquifer solids by sequential extraction procedure for evaluation of aquifer attenuation capacity for beryllium and cobalt and assess constituent mobility and stability.
Monitored Natural Attenuation (MNA)	Collected a comprehensive suite of geochemical analytes, including: cations (aluminum, calcium, iron, magnesium, manganese, potassium, and sodium), anions (bicarbonate, carbonate, chloride, fluoride, nitrate, sulfate, and sulfide), ortho phosphorus, sulfide, ferrous/ferric iron, and TOC, to evaluate occurrence and distribution of target chemical constituents in groundwater and to evaluate attenuation mechanisms in the aquifer. Reviewed preliminary data for potential source of acidity (e.g. iron sulfide versus aluminum sulfate), progress towards understanding potential chemical treatment options. Continuous water level monitoring with data loggers in selected wells to evaluate subsurface dynamics related to closure activities.	AP-3, A, B, and B': YGWA-4I, YGWA-5I, YGWA-5D, YGWA-17S, YGWA-18S, YGWA-18I, YGWA-20S, YGWA-21I, YGWC-23S, YGWC-24S, YGWC-33S, YGWC-36, PZ-35, and YAMW-1 R6 CCR Landfill: YGWA-39, YGWA-40, YGWC-38, YGWC-41, YGWC-42, and YGWC-43	Geochemical conditions in the vicinity of YGWC-33S are unique at the site and limited in aerial extent. Obtain a baseline of current geochemical conditions. Observe the effects of dewatering activities. Further assess correlation between declining water level and lowering of pH observed during preparation of ACM.	Compile analytical and subsurface hydrogeologic data and determine if MNA is feasible. Multiple sampling events will be required to build adequate data set for determining attenuation mechanism trends. Collect and analyze aquifer solids by sequential extraction procedure for evaluation of aquifer attenuation capacity for beryllium and cobalt and assess constituent mobility and stability. Evaluate sampling results and identify attenuation process occurring at the site
Permeable Reactive Barrier	Collected a comprehensive suite of geochemical analytes, including: cations (aluminum, calcium, iron, magnesium, manganese, potassium, and sodium), anions (bicarbonate, carbonate, chloride, fluoride, nitrate, sulfate, and sulfide), ortho phosphorus, sulfide, ferrous/ferric iron, and TOC, to evaluate occurrence and distribution of target chemical constituents in groundwater and to evaluate attenuation mechanisms in the aquifer. Reviewed preliminary data for potential source of acidity (e.g. iron sulfide versus aluminum sulfate), progress towards understanding potential chemical treatment options. Continuous water level monitoring with data loggers in selected wells to evaluate subsurface dynamics related to closure activities.	AP-3, A, B, and B': YGWA-4I, YGWA-5I, YGWA-5D, YGWA-17S, YGWA-18S, YGWA-18I, YGWA-20S, YGWA-21I, YGWC-23S, YGWC-24S, YGWC-33S, YGWC-36, PZ-35, and YAMW-1 R6 CCR Landfill: YGWA-39, YGWA-40, YGWC-38, YGWC-41, YGWC-42, and YGWC-43	Obtain a baseline of current geochemical conditions. Observe the effects of dewatering activities. Further assess correlation between declining water level and lowering of pH observed during preparation of ACM. Data may be used to develop bench-scale testing plan (i.e. suitable PRB media). Media that would facilitate sulfate reduction may be desirable	Evaluate available trenching technologies to determine viability. Assess the lateral extent of low pH groundwater in the vicinity of YGWC-33S. Refine the extent of the potential attenuation area. Assess the durability of potential reactive media (i.e. replacement frequency). Consider performing testing (e.g. hydraulic conductivity) to evaluate aquifer characteristics. Collect and analyze aquifer solids by sequential extraction procedure for evaluation of aquifer attenuation capacity for beryllium and cobalt and assess constituent mobility and stability

Table 3
Summary of Recent Activity
Plant Yates AP-3/A/B/B'

Remedial Alternative	Data Collected/Actions Completed	Locations Sampled	Applicability & Rationale	Comments/Planned Actions
Phytoremediation	Collected a comprehensive suite of geochemical analytes, including: cations (aluminum, calcium, iron, magnesium, manganese, potassium, and sodium), anions (bicarbonate, carbonate, chloride, fluoride, nitrate, sulfate, and sulfide), ortho phosphorus, sulfide, ferrous/ferric iron, and TOC, to evaluate occurrence and distribution of target chemical constituents in groundwater and to evaluate attenuation mechanisms in the aquifer. Reviewed preliminary data for potential source of acidity (e.g. iron sulfide versus aluminum sulfate), progress towards understanding potential chemical treatment options. Continuous water level monitoring with data loggers in selected wells to evaluate subsurface dynamics related to closure activities.	AP-3, A, B, and B': YGWA-4I, YGWA-5I, YGWA-5D, YGWA-17S, YGWA-18S, YGWA-18I, YGWA-20S, YGWA-21I, YGWC-23S, YGWC-24S, YGWC-33S, YGWC-36, PZ-35, and YAMW-1 R6 CCR Landfill: YGWA-39, YGWA-40, YGWC-38, YGWC-41, YGWC-42, and YGWC-43	Obtain a baseline of current geochemical conditions. Observe the effects of dewatering activities. Further assess correlation between declining water level and lowering of pH observed during preparation of ACM. Climate-compatible plants suitable for hyperaccumulation of beryllium have not been identified; there may be options for cobalt. An indirect TreeWell® type system that draws impacted water to the root zone through treatment media identified as possibly applicable in ACM.	Based on a preliminary desktop study there are no native or climate-compatible plants capable of treating both of the constituents of concern at the site. Continue to conduct supplementary groundwater sampling events to evaluate seasonal fluctuations in groundwater chemistry and plant nutrient levels. Continue to monitor groundwater elevation changes associated with dewatering and closure activities.
Subsurface Vertical Barrier Walls	Collected a comprehensive suite of geochemical analytes, including: cations (aluminum, calcium, iron, magnesium, manganese, potassium, and sodium), anions (bicarbonate, carbonate, chloride, fluoride, nitrate, sulfate, and sulfide), ortho phosphorus, sulfide, ferrous/ferric iron, and TOC, to evaluate occurrence and distribution of target chemical constituents in groundwater and to evaluate attenuation mechanisms in the aquifer. Reviewed preliminary data for potential source of acidity (e.g. iron sulfide versus aluminum sulfate), progress towards understanding potential chemical treatment options. Continuous water level monitoring with data loggers in selected wells to evaluate subsurface dynamics related to closure activities Collected geochemical data to evaluate groundwater parameter concentrations relative to NPDES limits and wastewater treatment capabilities (i.e., as with pump and treat redirected groundwater would potentially need to be treated).	AP-3, A, B, and B': YGWA-4I, YGWA-5I, YGWA-5D, YGWA-17S, YGWA-18S, YGWA-18I, YGWA-20S, YGWA-21I, YGWC-23S, YGWC-24S, YGWC-33S, YGWC-36, PZ-35, and YAMW-1 R6 CCR Landfill: YGWA-39, YGWA-40, YGWC-38, YGWC-41, YGWC-42, and YGWC-43	Obtain a baseline of current geochemical conditions. Observe the effects of dewatering activities. Further assess correlation between declining water level and lowering of pH observed during preparation of ACM. Data may be used to develop bench-scale testing plan (i.e. suitability of material with subsurface conditions, water treatment studies). Material would need to be resistant to acidic conditions present in the vicinity of YGWC-33S. Typical wall material (e.g. bentonite slurry) not acid resistant.	Additional literature review of recommended barrier wall formulation and installation technique if barrier walls are used. Further evaluate the suitability of the site geology (fractured bedrock) for a barrier wall. Assess the lateral extent of low pH groundwater in the vicinity of YGWC-33S. Refine the extent of the potential attenuation area. Mounding of groundwater upgradient from the barrier wall would need to be addressed by dewatering. Dewatering would need to be compatible with NPDES permit requirements. Collect and analyze aquifer solids by sequential extraction procedure for evaluation of aquifer attenuation capacity for beryllium and cobalt and assess constituent mobility and stability Perform additional aquifer testing to evaluate hydraulic characteristics.

Table 4
Summary of Analytical Data
Plant Yates AP-3/A/B/B'

Substance	YGWA-4I	YGWA-5I	YGWA-5D	YGWA-17S	YGWA-18S	YGWA-18I	YGWA-20S	YGWA-21I	YGWC-23S	YGWC-24S	YGWC-33S	YGWC-36	YGWC-49	PZ-35	YAMW-1
	10/10/2019	10/10/2019	10/10/2019	10/10/2019	9/26/2019	9/26/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	9/26/2019	10/10/2019	10/10/2019	9/26/2019	9/26/2019
Aluminum	ND	ND (0.062 J)	ND	ND (0.040 J)	ND (0.0648 J)	ND (0.050 J)	ND (0.065 J)	ND	ND (0.078 J)	ND	3.82	ND	ND	ND	ND
Calcium	9.9	2.4	24.2	2.4	1.07	5.25	2.6	5.6	3.6	1.7	127	12.2	12.6	4.83	10.2
Iron	ND	0.056	0.16	ND (0.026 J)	ND (0.0207 J)	0.0519	ND (0.035 J)	1.6	0.080	ND	0.495	ND (0.028 J)	0.088	ND	0.0967
Iron, Ferric	ND	ND	ND	ND	ND	ND	ND	0.60	ND	ND	0.50	ND	ND	ND	ND
Iron, Ferrous	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Magnesium	5.7	2.5	4.3	0.85	1.25	3.0	0.62	3.3	3.1	1.3	52.4	7.4	8.9	2.57	6.13
Manganese	ND (0.0089 J)	ND	0.52	ND (0.0085 J)	0.0122	0.0188	ND	0.34	ND	ND	12.8	0.062	ND (0.0076 J)	0.0164	0.410
Potassium	4.1	1.5	3.5	0.38	ND	ND (1.01 J)	0.59	2.9	0.72	0.61	ND (3.58 J)	1.9	1.9	ND (1.02 J)	23.3
Sodium	9.5	9.8	8.5	11.7	8.24	12.5	8.3	17.1	7.0	7.9	16.9	18.2	17.2	10.7	20.2
Alkalinity, Total (as $CaCO_3$)	64.0	26.0	95.0	16.0	7.0	33.0	22.0	62.0	7.0	13.0	ND	12.0	14.2	13.5	53.0
Alkalinity, Bicarbonate (as $CaCO_3$)	64.0	26.0	95.0	16.0	7.0	33.0	22.0	62.0	7.0	13.0	ND	12.0	14.2	13.5	53.0
Alkalinity, Carbonate (as $CaCO_3$)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Orthophosphate (as P)	ND	ND	0.041	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as N)	0.72	1.6	ND (0.010 J)	1.6	1.7	2.5	0.76	ND (0.048 J)	0.081	1.5	ND	1.6	1.1	2.1	0.66
Chloride	5.0	1.6	4.3	5.8	7.2	7.0	3.7	3.3	2.0	6.8	3.9	ND	5.3	7.5	6.4
Fluoride	ND (0.13 J)	1.1	ND (0.16 J)	ND	ND	ND	ND (0.099 J)	ND (0.11 J)	ND (0.11 J)	ND (0.030 J)	0.33	ND	ND (0.090 J)	ND	ND
Sulfate	9.2	1.8	ND	5.5	1.5	ND (0.78 J)	ND (0.058 J)	3.6	29.5	ND (0.21 J)	601	ND	79.5	14.3	46.6
Total Organic Carbon	ND (0.55 J)	ND	ND (0.62 J)	ND (0.62 J)	ND (0.55 J)	ND	ND	2.2	ND	ND	ND	ND	ND	ND	ND

Substance	YGWA-39	YGWA-40	YGWC-38	YGWC-41	YGWC-42	YGWC-43
	10/9/2019	10/9/2019	10/9/2019	10/9/2019	10/9/2019	10/9/2019
Aluminum	ND	ND	ND (0.068 J)	ND (0.048 J)	ND (0.047 J)	ND
Calcium	2.4	5.2	147	30.9	103	21.9
Iron	1.4	ND	ND	ND	0.35	26.0
Iron, Ferric	1.4	ND	ND	ND	0.35	26.0
Iron, Ferrous	1.5	0.0	0.0	0.3	0.0	3.0
Magnesium	3.0	2.9	73.2	36.4	110	43.0
Manganese	0.22	ND	0.11	0.073	0.12	1.7
Potassium	3.2	2.0	6.1	3.5	11.7	8.1
Sodium	11.9	7.9	24.3	20.5	28.8	20.7
Alkalinity, Total (as $CaCO_3$)	35.0	9.5	8.5	4.5	36.0	42.0
Alkalinity, Bicarbonate (as $CaCO_3$)	35.0	9.5	8.5	4.5	36.0	42.0
Alkalinity, Carbonate (as $CaCO_3$)	ND	ND	ND	ND	ND	ND
Orthophosphate (as P)	ND	ND	ND	ND	ND	ND
Sulfide	ND	ND	ND	ND	ND	ND
Nitrate (as N)	ND (0.013 J)	ND (0.026 J)	1.0	0.50	0.32	ND (0.011 J)
Chloride	2.0	5.0	4.8	3.3	4.3	2.4
Fluoride	ND	ND	ND	ND	ND	ND
Sulfate	14.7	27.6	692	256	732	279
Total Organic Carbon	4.1	ND	ND	ND	ND	ND

Notes:
1. Results for substances are reported in milligrams per liter (mg/L).
2. ND (Not Detected) indicates the substance was not detected above the laboratory method detection limit (MDL).
3. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instrument could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated value.

FIGURE 1 – WELL LOCATION MAP

ATLANTIC COAST CONSULTING, INC.
630 Colonial Park Dr.
Suite 110
Roswell, GA 30075
o 770.594.5998
www.atlcc.net

PROJECT:

PLANT YATES

708 DYER ROAD
NEWNAN, GEORGIA

REVISIONS

Drawn by: MM

Checked by: EP

PROJECT NUMBER:

I054-110

December 2019

WELL LOCATION MAP

FIGURE 1

APPENDIX A – LABORATORY ANALYTICAL REPORTS AND FIELD SAMPLING DATA

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

November 06, 2019

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

RE: Project: Plant Yates AP Additional
Pace Project No.: 2623614

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.

Revised Report: Report revised to add metals analysis

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

Sincerely,

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

Enclosures

cc: Chris Parker, Atlantic Coast Consulting
Evan Perry, Atlantic Coast Consulting
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 Yates AP Additional
Pace Project No.: 2623614

Atlanta Certification IDs

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

Ormond Beach Certification IDs

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

Asheville Certification IDs

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

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623614001	**YGWA-18S**	Water	09/26/19 10:45	09/26/19 15:15
2623614002	**YGWA-18I**	Water	09/26/19 12:30	09/26/19 15:15
2623614003	**YAMW-1**	Water	09/26/19 10:05	09/26/19 15:15
2623614004	**PZ-35**	Water	09/26/19 11:00	09/26/19 15:15
2623614005	**YGWC-33S**	Water	09/26/19 10:50	09/26/19 15:15

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110 Technology Parkway
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(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623614001	**YGWA-18S**	EPA 6010D	DS	7	PASI-A
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		SM 5310B	SA1	1	PASI-O
2623614002	**YGWA-18I**	EPA 6010D	DS	7	PASI-A
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		SM 5310B	SA1	1	PASI-O
2623614003	**YAMW-1**	EPA 6010D	DS	7	PASI-A
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		SM 5310B	SA1	1	PASI-O
2623614004	**PZ-35**	EPA 6010D	DS	7	PASI-A
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		SM 5310B	SA1	1	PASI-O
2623614005	**YGWC-33S**	EPA 6010D	DS, SH1	7	PASI-A
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		SM 5310B	SA1	1	PASI-O

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

ANALYTICAL RESULTS

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Sample: YGWA-18S **Lab ID: 2623614001** Collected: 09/26/19 10:45 Received: 09/26/19 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		09/26/19 10:45		
Iron, Ferrous	**0**	mg/L			1		09/26/19 10:45		
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**64.8J**	ug/L	100	29.8	1	10/06/19 10:41	10/07/19 15:56	7429-90-5	
Calcium	**1070**	ug/L	100	24.2	1	10/06/19 10:41	10/07/19 15:56	7440-70-2	
Iron	**20.7J**	ug/L	50.0	19.5	1	10/06/19 10:41	10/07/19 15:56	7439-89-6	
Magnesium	**1250**	ug/L	100	17.1	1	10/06/19 10:41	10/07/19 15:56	7439-95-4	
Manganese	**12.2**	ug/L	5.0	0.90	1	10/06/19 10:41	10/07/19 15:56	7439-96-5	
Potassium	ND	ug/L	5000	890	1	10/06/19 10:41	10/07/19 15:56	7440-09-7	
Sodium	**8240**	ug/L	5000	174	1	10/06/19 10:41	10/07/19 15:56	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**7.0**	mg/L	1.0	1.0	1		10/02/19 13:03		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/02/19 13:03		
Alkalinity, Total as CaCO3	**7.0**	mg/L	1.0	1.0	1		10/02/19 13:03		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/03/19 00:50	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:16		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 16:07	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.7**	mg/L	0.050	0.0050	1		09/27/19 03:29	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**7.2**	mg/L	1.0	0.60	1		10/01/19 19:45	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		10/01/19 19:45	16984-48-8	
Sulfate	**1.5**	mg/L	1.0	0.50	1		10/01/19 19:45	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	**0.55J**	mg/L	1.0	0.50	1		10/02/19 04:52	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Sample: YGWA-18I **Lab ID: 2623614002** Collected: 09/26/19 12:30 Received: 09/26/19 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		09/26/19 12:30		
Iron, Ferrous	**0**	mg/L			1		09/26/19 12:30		
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**50.0J**	ug/L	100	29.8	1	10/06/19 10:41	10/07/19 16:15	7429-90-5	
Calcium	**5250**	ug/L	100	24.2	1	10/06/19 10:41	10/07/19 16:15	7440-70-2	
Iron	**51.9**	ug/L	50.0	19.5	1	10/06/19 10:41	10/07/19 16:15	7439-89-6	
Magnesium	**3000**	ug/L	100	17.1	1	10/06/19 10:41	10/07/19 16:15	7439-95-4	
Manganese	**18.8**	ug/L	5.0	0.90	1	10/06/19 10:41	10/07/19 16:15	7439-96-5	
Potassium	**1010J**	ug/L	5000	890	1	10/06/19 10:41	10/07/19 16:15	7440-09-7	
Sodium	**12500**	ug/L	5000	174	1	10/06/19 10:41	10/07/19 16:15	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**33.0**	mg/L	20.0	20.0	1		09/30/19 17:40		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		09/30/19 17:40		
Alkalinity, Total as CaCO3	**33.0**	mg/L	20.0	20.0	1		09/30/19 17:40		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/03/19 00:50	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:19		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 16:08	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**2.5**	mg/L	0.050	0.0050	1		09/27/19 04:31	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**7.0**	mg/L	1.0	0.60	1		10/01/19 19:59	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		10/01/19 19:59	16984-48-8	
Sulfate	**0.78J**	mg/L	1.0	0.50	1		10/01/19 19:59	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 05:48	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Sample: YAMW-1 **Lab ID: 2623614003** Collected: 09/26/19 10:05 Received: 09/26/19 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		09/26/19 10:05		
Iron, Ferrous	**0**	mg/L			1		09/26/19 10:05		
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	ug/L	100	29.8	1	10/06/19 10:41	10/07/19 16:18	7429-90-5	
Calcium	**10200**	ug/L	100	24.2	1	10/06/19 10:41	10/07/19 16:18	7440-70-2	
Iron	**96.7**	ug/L	50.0	19.5	1	10/06/19 10:41	10/07/19 16:18	7439-89-6	
Magnesium	**6130**	ug/L	100	17.1	1	10/06/19 10:41	10/07/19 16:18	7439-95-4	
Manganese	**410**	ug/L	5.0	0.90	1	10/06/19 10:41	10/07/19 16:18	7439-96-5	
Potassium	**23300**	ug/L	5000	890	1	10/06/19 10:41	10/07/19 16:18	7440-09-7	
Sodium	**20200**	ug/L	5000	174	1	10/06/19 10:41	10/07/19 16:18	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**53.0**	mg/L	20.0	20.0	1		09/30/19 17:44		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		09/30/19 17:44		
Alkalinity, Total as CaCO3	**53.0**	mg/L	20.0	20.0	1		09/30/19 17:44		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/03/19 00:50	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:16		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 16:11	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.66**	mg/L	0.050	0.0050	1		09/27/19 02:27	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**6.4**	mg/L	1.0	0.60	1		10/01/19 20:43	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		10/01/19 20:43	16984-48-8	
Sulfate	**46.6**	mg/L	1.0	0.50	1		10/01/19 20:43	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 06:00	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Sample: PZ-35 **Lab ID: 2623614004** Collected: 09/26/19 11:00 Received: 09/26/19 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		09/26/19 11:00		
Iron, Ferrous	**0**	mg/L			1		09/26/19 11:00		
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	ug/L	100	29.8	1	10/06/19 10:41	10/07/19 16:21	7429-90-5	
Calcium	**4830**	ug/L	100	24.2	1	10/06/19 10:41	10/07/19 16:21	7440-70-2	
Iron	ND	ug/L	50.0	19.5	1	10/06/19 10:41	10/07/19 16:21	7439-89-6	
Magnesium	**2570**	ug/L	100	17.1	1	10/06/19 10:41	10/07/19 16:21	7439-95-4	
Manganese	**16.4**	ug/L	5.0	0.90	1	10/06/19 10:41	10/07/19 16:21	7439-96-5	
Potassium	**1020J**	ug/L	5000	890	1	10/06/19 10:41	10/07/19 16:21	7440-09-7	
Sodium	**10700**	ug/L	5000	174	1	10/06/19 10:41	10/07/19 16:21	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**13.5**	mg/L	1.0	1.0	1		10/02/19 13:08		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/02/19 13:08		
Alkalinity, Total as CaCO3	**13.5**	mg/L	1.0	1.0	1		10/02/19 13:08		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/03/19 00:50	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:18		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:39	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**2.1**	mg/L	0.050	0.0050	1		09/27/19 04:10	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**7.5**	mg/L	1.0	0.60	1		10/01/19 20:58	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		10/01/19 20:58	16984-48-8	
Sulfate	**14.3**	mg/L	1.0	0.50	1		10/01/19 20:58	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 07:05	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Sample: YGWC-33S **Lab ID: 2623614005** Collected: 09/26/19 10:50 Received: 09/26/19 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		09/26/19 10:50		
Iron, Ferrous	**0**	mg/L			1		09/26/19 10:50		
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**3820**	ug/L	100	29.8	1	10/06/19 10:41	10/07/19 16:24	7429-90-5	
Calcium	**127000**	ug/L	500	121	5	10/06/19 10:41	10/07/19 22:31	7440-70-2	
Iron	**495**	ug/L	50.0	19.5	1	10/06/19 10:41	10/07/19 16:24	7439-89-6	
Magnesium	**52400**	ug/L	100	17.1	1	10/06/19 10:41	10/07/19 16:24	7439-95-4	
Manganese	**12800**	ug/L	25.0	4.5	5	10/06/19 10:41	10/07/19 22:31	7439-96-5	
Potassium	**3580J**	ug/L	5000	890	1	10/06/19 10:41	10/07/19 16:24	7440-09-7	
Sodium	**16900**	ug/L	5000	174	1	10/06/19 10:41	10/07/19 16:24	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	20.0	20.0	1		09/30/19 17:48		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		09/30/19 17:48		
Alkalinity, Total as CaCO3	ND	mg/L	20.0	20.0	1		09/30/19 17:48		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	**0.50**	mg/L	0.20	0.20	1		10/03/19 00:50	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:18		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:41	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		09/27/19 03:50	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**3.9**	mg/L	1.0	0.60	1		10/01/19 21:12	16887-00-6	
Fluoride	**0.33**	mg/L	0.30	0.050	1		10/01/19 21:12	16984-48-8	
Sulfate	**601**	mg/L	12.0	6.0	12		10/02/19 01:05	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 07:48	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 501963 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010 MET
Associated Lab Samples: 2623614001, 2623614002, 2623614003, 2623614004, 2623614005

METHOD BLANK: 2699171 Matrix: Water
Associated Lab Samples: 2623614001, 2623614002, 2623614003, 2623614004, 2623614005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	ug/L	ND	100	29.8	10/07/19 15:50	
Calcium	ug/L	ND	100	24.2	10/07/19 15:50	
Iron	ug/L	ND	50.0	19.5	10/07/19 15:50	
Magnesium	ug/L	ND	100	17.1	10/07/19 15:50	
Manganese	ug/L	1.1J	5.0	0.90	10/07/19 15:50	
Potassium	ug/L	ND	5000	890	10/07/19 15:50	
Sodium	ug/L	ND	5000	174	10/07/19 15:50	

LABORATORY CONTROL SAMPLE: 2699172

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	4890	98	80-120	
Calcium	ug/L	5000	4940	99	80-120	
Iron	ug/L	5000	4920	98	80-120	
Magnesium	ug/L	5000	4920	98	80-120	
Manganese	ug/L	500	495	99	80-120	
Potassium	ug/L	5000	4890J	98	80-120	
Sodium	ug/L	5000	4980J	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2699173 2699174

Parameter	Units	2623614001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	64.8J	5000	5000	5040	5140	100	101	75-125	2	20	
Calcium	ug/L	1070	5000	5000	6020	6170	99	102	75-125	2	20	
Iron	ug/L	20.7J	5000	5000	4980	5100	99	102	75-125	2	20	
Magnesium	ug/L	1250	5000	5000	6180	6310	99	101	75-125	2	20	
Manganese	ug/L	12.2	500	500	505	514	98	100	75-125	2	20	
Potassium	ug/L	ND	5000	5000	5610	5740	100	103	75-125	2	20	
Sodium	ug/L	8240	5000	5000	13300	13500	100	106	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 36180 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623614002, 2623614003, 2623614005

METHOD BLANK: 163383 Matrix: Water
Associated Lab Samples: 2623614002, 2623614003, 2623614005

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

LABORATORY CONTROL SAMPLE: 163384

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

SAMPLE DUPLICATE: 163385

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

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QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 36336 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2623614001, 2623614004

METHOD BLANK: 164031 Matrix: Water
Associated Lab Samples: 2623614001, 2623614004

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

LABORATORY CONTROL SAMPLE: 164032

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

SAMPLE DUPLICATE: 164047

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

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 36055 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623614001, 2623614002, 2623614003, 2623614004, 2623614005

METHOD BLANK: 162666 Matrix: Water
Associated Lab Samples: 2623614001, 2623614002, 2623614003, 2623614004, 2623614005

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

LABORATORY CONTROL SAMPLE: 162667

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162668 162669

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

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 36186 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623614001, 2623614002, 2623614003

METHOD BLANK: 163399 Matrix: Water
Associated Lab Samples: 2623614001, 2623614002, 2623614003

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

LABORATORY CONTROL SAMPLE: 163400

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163401 163402

Parameter	Units	2623644003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.49	0.50	98	100	30-129	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 36187 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623614004, 2623614005

METHOD BLANK: 163403 Matrix: Water
Associated Lab Samples: 2623614004, 2623614005

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

LABORATORY CONTROL SAMPLE: 163404

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163405 163406

Parameter	Units	2623614004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.40	0.40	81	80	30-129	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 36045 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623614001, 2623614002, 2623614003, 2623614004, 2623614005

METHOD BLANK: 162623 Matrix: Water
Associated Lab Samples: 2623614001, 2623614002, 2623614003, 2623614004, 2623614005

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

LABORATORY CONTROL SAMPLE: 162624

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162625 162626

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

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QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 500864 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623614001, 2623614002, 2623614003, 2623614004, 2623614005

METHOD BLANK: 2694310 Matrix: Water
Associated Lab Samples: 2623614001, 2623614002, 2623614003, 2623614004, 2623614005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/01/19 17:49	
Fluoride	mg/L	ND	0.10	0.050	10/01/19 17:49	
Sulfate	mg/L	ND	1.0	0.50	10/01/19 17:49	

LABORATORY CONTROL SAMPLE: 2694311

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.0	98	90-110	
Fluoride	mg/L	2.5	2.7	108	90-110	
Sulfate	mg/L	50	50.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2694312 2694313

Parameter	Units	2623620013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	17.1	50	50	74.9	69.9	115	105	90-110	7	10	M1
Fluoride	mg/L	0.064J	2.5	2.5	2.9	2.7	115	104	90-110	10	10	M1
Sulfate	mg/L	80.1	50	50	123	123	85	86	90-110	0	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2694314 2694315

Parameter	Units	92447530001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	22.7	50	50	76.0	75.5	107	106	90-110	1	10	
Fluoride	mg/L	0.073J	2.5	2.5	2.7	2.7	107	106	90-110	1	10	
Sulfate	mg/L	10.1	50	50	64.0	63.6	108	107	90-110	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 574635 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B TOC
Associated Lab Samples: 2623614001, 2623614002, 2623614003

METHOD BLANK: 3122442 Matrix: Water
Associated Lab Samples: 2623614001, 2623614002, 2623614003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/01/19 22:06	

LABORATORY CONTROL SAMPLE: 3122443

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122444 3122445

Parameter	Units	35500175001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.50U	20	20	22.1	22.2	108	109	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122446 3122447

Parameter	Units	35500427009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	6.5	20	20	25.7	25.6	96	96	80-120	1	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates AP Additional
Pace Project No.: 2623614

QC Batch: 574637 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B TOC
Associated Lab Samples: 2623614004, 2623614005

METHOD BLANK: 3122448 Matrix: Water
Associated Lab Samples: 2623614004, 2623614005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/02/19 06:27	

LABORATORY CONTROL SAMPLE: 3122449

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122450 3122451

Parameter	Units	2623614004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	20	20	19.4	19.4	96	96	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124464 3124465

Parameter	Units	35501085001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.50U	20	20	20.2	20.3	99	100	80-120	0	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Yates AP Additional
Pace Project No.: 2623614

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

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

ANALYTE QUALIFIERS

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623614001	**YGWA-18S**				
2623614002	**YGWA-18I**				
2623614003	**YAMW-1**				
2623614004	**PZ-35**				
2623614005	**YGWC-33S**				
2623614001	**YGWA-18S**	EPA 3010A	501963	EPA 6010D	501984
2623614002	**YGWA-18I**	EPA 3010A	501963	EPA 6010D	501984
2623614003	**YAMW-1**	EPA 3010A	501963	EPA 6010D	501984
2623614004	**PZ-35**	EPA 3010A	501963	EPA 6010D	501984
2623614005	**YGWC-33S**	EPA 3010A	501963	EPA 6010D	501984
2623614002	**YGWA-18I**	SM 2320B	36180		
2623614003	**YAMW-1**	SM 2320B	36180		
2623614005	**YGWC-33S**	SM 2320B	36180		
2623614001	**YGWA-18S**	SM 2320B	36336		
2623614004	**PZ-35**	SM 2320B	36336		
2623614001	**YGWA-18S**	SM 3500 Fe -Fe2	36405		
2623614002	**YGWA-18I**	SM 3500 Fe -Fe2	36405		
2623614003	**YAMW-1**	SM 3500 Fe -Fe2	36405		
2623614004	**PZ-35**	SM 3500 Fe -Fe2	36405		
2623614005	**YGWC-33S**	SM 3500 Fe -Fe2	36405		
2623614001	**YGWA-18S**	SM 4500-P	36055		
2623614002	**YGWA-18I**	SM 4500-P	36055		
2623614003	**YAMW-1**	SM 4500-P	36055		
2623614004	**PZ-35**	SM 4500-P	36055		
2623614005	**YGWC-33S**	SM 4500-P	36055		
2623614001	**YGWA-18S**	SM 4500-S2 D	36186		
2623614002	**YGWA-18I**	SM 4500-S2 D	36186		
2623614003	**YAMW-1**	SM 4500-S2 D	36186		
2623614004	**PZ-35**	SM 4500-S2 D	36187		
2623614005	**YGWC-33S**	SM 4500-S2 D	36187		
2623614001	**YGWA-18S**	EPA 300.0	36045		
2623614002	**YGWA-18I**	EPA 300.0	36045		
2623614003	**YAMW-1**	EPA 300.0	36045		
2623614004	**PZ-35**	EPA 300.0	36045		
2623614005	**YGWC-33S**	EPA 300.0	36045		
2623614001	**YGWA-18S**	EPA 300.0 Rev 2.1 1993	500864		
2623614002	**YGWA-18I**	EPA 300.0 Rev 2.1 1993	500864		
2623614003	**YAMW-1**	EPA 300.0 Rev 2.1 1993	500864		
2623614004	**PZ-35**	EPA 300.0 Rev 2.1 1993	500864		
2623614005	**YGWC-33S**	EPA 300.0 Rev 2.1 1993	500864		
2623614001	**YGWA-18S**	SM 5310B	574635		
2623614002	**YGWA-18I**	SM 5310B	574635		
2623614003	**YAMW-1**	SM 5310B	574635		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Yates AP Additional
Pace Project No.: 2623614

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623614004	**PZ-35**	SM 5310B	574637		
2623614005	**YGWC-33S**	SM 5310B	574637		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	ACC	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Yates AP Additional Parameters	Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Requested Due Date:		Project #:		Pace Profile #:	335.6

Regulatory Agency: —

State / Location: GA

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

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE START	COLLECTED TIME END	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals *	Alkalinity (carb + bicarb)	NO3, Cl, SO4, F	TOC (total organic carbon)	Ortho Phosphorus	Sulfide	Ferric Iron	Residual Chlorine (Y/N)	Fe2r (Field test)
1	YBWA-18S	W	G	9/26/19	10:45		7										✓	✓	✓	✓	✓	✓	✓		Fe2r = 0
2	YBWA-18I	W	G	9/26/19	12:30		7										✓	✓	✓	✓	✓	✓	✓		Fe2r = 0
3	YAMW-1	W	G	9/26/19	10:05		7										✓	✓	✓	✓	✓	✓	✓		Fe2r = 0
4	PZ-35	W	G	9/26/19	11:00		7										✓	✓	✓	✓	✓	✓	✓		Fe2r = 0
5	YBWC-33S	W	C	9/26/19	10:50		7										✓	✓	✓	✓	✓	✓	✓		Fe2r = 0
6																									
7																									
8																									
9																									
10																									
11																									
12																									

WO# : 2623614

2623614

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
* Metals list: Al,Ca,Fe,Mg,Mn,K,Na	C. Parker ACC	9-26-19	1515	M Dahman	9/26/19	1515	0.2 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: C. Parker, A. James, J. Bradford

SIGNATURE of SAMPLER: C. Parker DATE Signed: 9/26/19

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

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

WO#: 2623614

PM: BM Due Date: 10/03/19

CLIENT: GAPower-CCR

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

Tracking #:

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

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

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

Cooler Temperature 0.2 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 9/26/19 MK

Comments:

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

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

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

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

November 12, 2019

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

RE: Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 09, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

cc: Chris Parker, Atlantic Coast Consulting
Evan Perry, Atlantic Coast Consulting
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 Yates AP Addition. Para.
Pace Project No.: 2624146

Atlanta Certification IDs

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

Ormond Beach Certification IDs

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

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

SAMPLE SUMMARY

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624146001	**YGWA-39**	Water	10/09/19 10:45	10/09/19 17:00
2624146002	**YGWA-40**	Water	10/09/19 09:46	10/09/19 17:00
2624146003	**YGWC-38**	Water	10/09/19 11:16	10/09/19 17:00
2624146004	**YGWC-41**	Water	10/09/19 14:02	10/09/19 17:00
2624146005	**YGWC-42**	Water	10/09/19 13:55	10/09/19 17:00
2624146006	**YGWC-43**	Water	10/09/19 12:10	10/09/19 17:00

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SAMPLE ANALYTE COUNT

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624146001	**YGWA-39**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	ANB	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
		SM 5310B	SA1	1	PASI-O
2624146002	**YGWA-40**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	ANB	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
		SM 5310B	SA1	1	PASI-O
2624146003	**YGWC-38**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	ANB	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
		SM 5310B	SA1	1	PASI-O
2624146004	**YGWC-41**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	ANB	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
		SM 5310B	SA1	1	PASI-O
2624146005	**YGWC-42**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA

Pace Analytical Services, LLC
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(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	ANB	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
		SM 5310B	SA1	1	PASI-O
2624146006	**YGWC-43**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	ANB	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
		SM 5310B	SA1	1	PASI-O

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

ANALYTICAL RESULTS

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Sample: YGWA-39 **Lab ID: 2624146001** Collected: 10/09/19 10:45 Received: 10/09/19 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/19 10:45		
Iron, Ferrous	**1.5**	mg/L			1		10/09/19 10:45		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/10/19 17:39	10/18/19 06:43	7429-90-5	
Calcium	**2.4**	mg/L	0.50	0.14	1	10/10/19 17:39	10/27/19 18:04	7440-70-2	
Iron	**1.4**	mg/L	0.040	0.015	1	10/10/19 17:39	10/27/19 18:04	7439-89-6	
Magnesium	**3.0**	mg/L	0.050	0.011	1	10/10/19 17:39	10/18/19 06:43	7439-95-4	
Manganese	**0.22**	mg/L	0.040	0.0061	1	10/10/19 17:39	10/18/19 06:43	7439-96-5	
Potassium	**3.2**	mg/L	0.20	0.026	1	10/10/19 17:39	10/27/19 18:04	7440-09-7	
Sodium	**11.9**	mg/L	1.0	0.19	1	10/10/19 17:39	10/18/19 06:43	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**35.0**	mg/L	20.0	20.0	1		10/14/19 16:02		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/14/19 16:02		
Alkalinity, Total as CaCO3	**35.0**	mg/L	20.0	20.0	1		10/14/19 16:02		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	**1.4**	mg/L	0.20	0.20	1		10/30/19 00:17	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/10/19 11:53		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/11/19 15:27	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.013J**	mg/L	0.050	0.0050	1		10/10/19 03:04	14797-55-8	B
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.0**	mg/L	1.0	0.024	1		10/15/19 03:28	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/15/19 03:28	16984-48-8	
Sulfate	**14.7**	mg/L	1.0	0.017	1		10/15/19 03:28	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	**4.1**	mg/L	1.0	0.50	1		10/19/19 19:17	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Sample: YGWA-40 **Lab ID: 2624146002** Collected: 10/09/19 09:46 Received: 10/09/19 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/19 09:46		
Iron, Ferrous	**0.0**	mg/L			1		10/09/19 09:46		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/10/19 17:39	10/18/19 06:58	7429-90-5	
Calcium	**5.2**	mg/L	0.50	0.14	1	10/10/19 17:39	10/27/19 18:08	7440-70-2	
Iron	ND	mg/L	0.040	0.015	1	10/10/19 17:39	10/27/19 18:08	7439-89-6	
Magnesium	**2.9**	mg/L	0.050	0.011	1	10/10/19 17:39	10/18/19 06:58	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/10/19 17:39	10/18/19 06:58	7439-96-5	
Potassium	**2.0**	mg/L	0.20	0.026	1	10/10/19 17:39	10/27/19 18:08	7440-09-7	
Sodium	**7.9**	mg/L	1.0	0.19	1	10/10/19 17:39	10/18/19 06:58	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**9.5**	mg/L	1.0	1.0	1		10/17/19 11:42		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/17/19 11:42		
Alkalinity, Total as CaCO3	**9.5**	mg/L	1.0	1.0	1		10/17/19 11:42		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/30/19 00:17	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/10/19 11:54		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/11/19 15:27	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.026J**	mg/L	0.050	0.0050	1		10/10/19 03:26	14797-55-8	B
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.0**	mg/L	1.0	0.024	1		10/15/19 04:12	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/15/19 04:12	16984-48-8	
Sulfate	**27.6**	mg/L	1.0	0.017	1		10/15/19 04:12	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/19/19 19:31	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Sample: YGWC-38 **Lab ID: 2624146003** Collected: 10/09/19 11:16 Received: 10/09/19 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/19 11:16		
Iron, Ferrous	**0.0**	mg/L			1		10/09/19 11:16		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.068J**	mg/L	0.10	0.032	1	10/10/19 17:39	10/18/19 07:03	7429-90-5	
Calcium	**147**	mg/L	0.50	0.14	1	10/10/19 17:39	10/27/19 18:13	7440-70-2	
Iron	ND	mg/L	0.040	0.015	1	10/10/19 17:39	10/27/19 18:13	7439-89-6	
Magnesium	**73.2**	mg/L	0.050	0.011	1	10/10/19 17:39	10/18/19 07:03	7439-95-4	
Manganese	**0.11**	mg/L	0.040	0.0061	1	10/10/19 17:39	10/18/19 07:03	7439-96-5	
Potassium	**6.1**	mg/L	0.20	0.026	1	10/10/19 17:39	10/27/19 18:13	7440-09-7	
Sodium	**24.3**	mg/L	1.0	0.19	1	10/10/19 17:39	10/18/19 07:03	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**8.5**	mg/L	1.0	1.0	1		10/17/19 11:47		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/17/19 11:47		
Alkalinity, Total as CaCO3	**8.5**	mg/L	1.0	1.0	1		10/17/19 11:47		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/30/19 00:17	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/10/19 11:55		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/11/19 15:28	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.0**	mg/L	0.050	0.0050	1		10/10/19 03:48	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.8**	mg/L	1.0	0.024	1		10/15/19 04:34	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/15/19 04:34	16984-48-8	
Sulfate	**692**	mg/L	20.0	0.34	20		10/15/19 19:55	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/19/19 19:44	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Sample: YGWC-41 **Lab ID: 2624146004** Collected: 10/09/19 14:02 Received: 10/09/19 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/19 14:02		
Iron, Ferrous	**0.3**	mg/L			1		10/09/19 14:02		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.048J**	mg/L	0.10	0.032	1	10/10/19 17:39	10/18/19 07:18	7429-90-5	
Calcium	**30.9**	mg/L	0.50	0.14	1	10/10/19 17:39	10/27/19 18:18	7440-70-2	
Iron	ND	mg/L	0.040	0.015	1	10/10/19 17:39	10/27/19 18:18	7439-89-6	
Magnesium	**36.4**	mg/L	0.050	0.011	1	10/10/19 17:39	10/18/19 07:18	7439-95-4	
Manganese	**0.073**	mg/L	0.040	0.0061	1	10/10/19 17:39	10/18/19 07:18	7439-96-5	
Potassium	**3.5**	mg/L	0.20	0.026	1	10/10/19 17:39	10/27/19 18:18	7440-09-7	
Sodium	**20.5**	mg/L	1.0	0.19	1	10/10/19 17:39	10/18/19 07:18	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**4.5**	mg/L	1.0	1.0	1		10/17/19 11:38		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/17/19 11:38		
Alkalinity, Total as CaCO3	**4.5**	mg/L	1.0	1.0	1		10/17/19 11:38		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/30/19 00:17	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/10/19 11:56		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/11/19 15:48	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.50**	mg/L	0.050	0.0050	1		10/10/19 04:10	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.3**	mg/L	1.0	0.024	1		10/15/19 04:56	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/15/19 04:56	16984-48-8	
Sulfate	**256**	mg/L	10.0	0.17	10		10/15/19 20:17	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/19/19 20:47	7440-44-0	

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ANALYTICAL RESULTS

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Sample: YGWC-42 **Lab ID: 2624146005** Collected: 10/09/19 13:55 Received: 10/09/19 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/19 13:55		
Iron, Ferrous	**0.0**	mg/L			1		10/09/19 13:55		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.047J**	mg/L	0.10	0.032	1	10/10/19 17:39	10/18/19 07:22	7429-90-5	
Calcium	**103**	mg/L	0.50	0.14	1	10/10/19 17:39	10/27/19 18:23	7440-70-2	
Iron	**0.35**	mg/L	0.040	0.015	1	10/10/19 17:39	10/27/19 18:23	7439-89-6	
Magnesium	**110**	mg/L	0.050	0.011	1	10/10/19 17:39	10/18/19 07:22	7439-95-4	
Manganese	**0.12**	mg/L	0.040	0.0061	1	10/10/19 17:39	10/18/19 07:22	7439-96-5	
Potassium	**11.7**	mg/L	0.20	0.026	1	10/10/19 17:39	10/27/19 18:23	7440-09-7	
Sodium	**28.8**	mg/L	1.0	0.19	1	10/10/19 17:39	10/18/19 07:22	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**36.0**	mg/L	20.0	20.0	1		10/14/19 16:21		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/14/19 16:21		
Alkalinity, Total as CaCO3	**36.0**	mg/L	20.0	20.0	1		10/14/19 16:21		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	**0.35**	mg/L	0.20	0.20	1		10/30/19 00:17	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/10/19 11:57		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/11/19 15:51	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.32**	mg/L	0.050	0.0050	1		10/10/19 04:31	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.3**	mg/L	1.0	0.024	1		10/15/19 05:19	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/15/19 05:19	16984-48-8	
Sulfate	**732**	mg/L	20.0	0.34	20		10/15/19 20:39	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/19/19 22:08	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Sample: YGWC-43 **Lab ID: 2624146006** Collected: 10/09/19 12:10 Received: 10/09/19 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/19 12:10		
Iron, Ferrous	**3.0**	mg/L			1		10/09/19 12:10		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/10/19 17:39	10/18/19 07:27	7429-90-5	
Calcium	**21.9**	mg/L	2.5	0.71	5	10/10/19 17:39	10/27/19 18:28	7440-70-2	
Iron	**26.0**	mg/L	0.20	0.076	5	10/10/19 17:39	10/27/19 18:28	7439-89-6	
Magnesium	**43.0**	mg/L	0.050	0.011	1	10/10/19 17:39	10/18/19 07:27	7439-95-4	
Manganese	**1.7**	mg/L	0.040	0.0061	1	10/10/19 17:39	10/18/19 07:27	7439-96-5	
Potassium	**8.1**	mg/L	1.0	0.13	5	10/10/19 17:39	10/27/19 18:28	7440-09-7	
Sodium	**20.7**	mg/L	1.0	0.19	1	10/10/19 17:39	10/18/19 07:27	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**42.0**	mg/L	20.0	20.0	1		10/14/19 16:23		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/14/19 16:23		
Alkalinity, Total as CaCO3	**42.0**	mg/L	20.0	20.0	1		10/14/19 16:23		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	**26.0**	mg/L	0.20	0.20	1		10/30/19 00:17	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/10/19 11:57		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/11/19 15:51	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.011J**	mg/L	0.050	0.0050	1		10/10/19 04:53	14797-55-8	B
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.4**	mg/L	1.0	0.024	1		10/15/19 05:41	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/15/19 05:41	16984-48-8	
Sulfate	**279**	mg/L	10.0	0.17	10		10/15/19 21:01	14808-79-8	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/19/19 22:21	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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QUALITY CONTROL DATA

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

QC Batch: 36821 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

METHOD BLANK: 166361 Matrix: Water
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.032	10/18/19 05:40	
Calcium	mg/L	ND	0.50	0.14	10/18/19 05:40	
Iron	mg/L	ND	0.040	0.015	10/18/19 05:40	
Magnesium	mg/L	ND	0.050	0.011	10/18/19 05:40	
Manganese	mg/L	ND	0.040	0.0061	10/18/19 05:40	
Potassium	mg/L	ND	0.20	0.026	10/18/19 05:40	
Sodium	mg/L	ND	1.0	0.19	10/18/19 05:40	

LABORATORY CONTROL SAMPLE: 166362

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	0.98	98	80-120	
Calcium	mg/L	1	1.0	100	80-120	
Iron	mg/L	1	1.0	100	80-120	
Magnesium	mg/L	1	1.0	101	80-120	
Manganese	mg/L	1	1.0	101	80-120	
Potassium	mg/L	1	1.0	104	80-120	
Sodium	mg/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166363 166364

Parameter	Units	2624145001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	ND	1	1	1.0	0.98	99	96	75-125	2	20	
Calcium	mg/L	ND	1	1	10.7	10.3	52	3	75-125	5	20	M1
Iron	mg/L	ND	1	1	1.0	0.99	98	94	75-125	4	20	
Magnesium	mg/L	11.2	1	1	11.9	11.4	73	17	75-125	5	20	M1
Manganese	mg/L	0.0098J	1	1	1.0	0.99	100	98	75-125	2	20	
Potassium	mg/L	4.4J	1	1	4.7	4.5	38	14	75-125	5	20	M1
Sodium	mg/L	12.0	1	1	12.8	12.2	74	20	75-125	4	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

QC Batch: 36911 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2624146001, 2624146005, 2624146006

METHOD BLANK: 166867 Matrix: Water
Associated Lab Samples: 2624146001, 2624146005, 2624146006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/14/19 15:24	

LABORATORY CONTROL SAMPLE: 166868

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	99.0	99	85-115	

SAMPLE DUPLICATE: 166869

Parameter	Units	2624145001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	36.0	37.0	3	10	

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QUALITY CONTROL DATA

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

QC Batch: 37108 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2624146002, 2624146003, 2624146004

METHOD BLANK: 167721 Matrix: Water
Associated Lab Samples: 2624146002, 2624146003, 2624146004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	10/17/19 11:36	

LABORATORY CONTROL SAMPLE: 167722

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	49.0	98	85-115	

SAMPLE DUPLICATE: 167723

Parameter	Units	2624146002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	9.5	9.5	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

QC Batch: 36778 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

METHOD BLANK: 166160 Matrix: Water
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/10/19 11:46	

LABORATORY CONTROL SAMPLE: 166161

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166162 166163

Parameter	Units	2624145001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.52	0.52	104	103	80-120	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

QC Batch: 36871 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

METHOD BLANK: 166674 Matrix: Water
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	10/11/19 14:47	

LABORATORY CONTROL SAMPLE: 166675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166676 166677

Parameter	Units	2624055001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.45	0.44	89	89	30-129	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

QC Batch: 36731 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

METHOD BLANK: 165837 Matrix: Water
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	0.013J	0.050	0.0050	10/09/19 20:38	

LABORATORY CONTROL SAMPLE: 165838

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 165839 165840

Parameter	Units	2624087002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.24	10	10	2.3	2.3	21	21	90-110	1	15	M1

MATRIX SPIKE SAMPLE: 166092

Parameter	Units	2624146006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	0.011J	10	10.3	102	90-110	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

QC Batch: 36938 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

METHOD BLANK: 166950 Matrix: Water
Associated Lab Samples: 2624146001, 2624146002, 2624146003, 2624146004, 2624146005, 2624146006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/14/19 21:35	
Fluoride	mg/L	ND	0.30	0.029	10/14/19 21:35	
Sulfate	mg/L	ND	1.0	0.017	10/14/19 21:35	

LABORATORY CONTROL SAMPLE: 166951

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.7	97	90-110	
Fluoride	mg/L	10	9.9	99	90-110	
Sulfate	mg/L	10	9.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166952 166953

Parameter	Units	2624142005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.1	10	10	13.6	13.6	95	95	90-110	0	15	
Fluoride	mg/L	ND	10	10	9.9	9.8	99	98	90-110	1	15	

MATRIX SPIKE SAMPLE: 166954

Parameter	Units	2624142006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.3	10	12.1	97	90-110	
Fluoride	mg/L	ND	10	10.2	102	90-110	
Sulfate	mg/L	279	10	23.4	-2560	90-110	M1

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

QC Batch: 579958 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B TOC
Associated Lab Samples: 2624146001, 2624146002, 2624146003

METHOD BLANK: 3153230 Matrix: Water
Associated Lab Samples: 2624146001, 2624146002, 2624146003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/19/19 12:22	

LABORATORY CONTROL SAMPLE: 3153231

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153232 3153233

Parameter	Units	2624408001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.5	20	20	21.5	21.5	100	100	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153234 3153235

Parameter	Units	2624399007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.0 U	20	20	18.8	18.6	94	93	80-120	1	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

QC Batch: 579960 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B TOC
Associated Lab Samples: 2624146004, 2624146005, 2624146006

METHOD BLANK: 3153236 Matrix: Water
Associated Lab Samples: 2624146004, 2624146005, 2624146006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/19/19 20:19	

LABORATORY CONTROL SAMPLE: 3153237

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153238 3153239

Parameter	Units	2624146004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	20	20	19.3	19.0	95	93	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3153240 3153241

Parameter	Units	35505517009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.58J	20	20	19.7	19.3	95	94	80-120	2	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624146001	**YGWA-39**				
2624146002	**YGWA-40**				
2624146003	**YGWC-38**				
2624146004	**YGWC-41**				
2624146005	**YGWC-42**				
2624146006	**YGWC-43**				
2624146001	**YGWA-39**	EPA 3010A	36821	EPA 6010D	36834
2624146002	**YGWA-40**	EPA 3010A	36821	EPA 6010D	36834
2624146003	**YGWC-38**	EPA 3010A	36821	EPA 6010D	36834
2624146004	**YGWC-41**	EPA 3010A	36821	EPA 6010D	36834
2624146005	**YGWC-42**	EPA 3010A	36821	EPA 6010D	36834
2624146006	**YGWC-43**	EPA 3010A	36821	EPA 6010D	36834
2624146001	**YGWA-39**	SM 2320B	36911		
2624146005	**YGWC-42**	SM 2320B	36911		
2624146006	**YGWC-43**	SM 2320B	36911		
2624146002	**YGWA-40**	SM 2320B	37108		
2624146003	**YGWC-38**	SM 2320B	37108		
2624146004	**YGWC-41**	SM 2320B	37108		
2624146001	**YGWA-39**	SM 3500 Fe -Fe2	37787		
2624146002	**YGWA-40**	SM 3500 Fe -Fe2	37787		
2624146003	**YGWC-38**	SM 3500 Fe -Fe2	37787		
2624146004	**YGWC-41**	SM 3500 Fe -Fe2	37787		
2624146005	**YGWC-42**	SM 3500 Fe -Fe2	37787		
2624146006	**YGWC-43**	SM 3500 Fe -Fe2	37787		
2624146001	**YGWA-39**	SM 4500-P	36778		
2624146002	**YGWA-40**	SM 4500-P	36778		
2624146003	**YGWC-38**	SM 4500-P	36778		
2624146004	**YGWC-41**	SM 4500-P	36778		
2624146005	**YGWC-42**	SM 4500-P	36778		
2624146006	**YGWC-43**	SM 4500-P	36778		
2624146001	**YGWA-39**	SM 4500-S2 D	36871		
2624146002	**YGWA-40**	SM 4500-S2 D	36871		
2624146003	**YGWC-38**	SM 4500-S2 D	36871		
2624146004	**YGWC-41**	SM 4500-S2 D	36871		
2624146005	**YGWC-42**	SM 4500-S2 D	36871		
2624146006	**YGWC-43**	SM 4500-S2 D	36871		
2624146001	**YGWA-39**	EPA 300.0	36731		
2624146002	**YGWA-40**	EPA 300.0	36731		
2624146003	**YGWC-38**	EPA 300.0	36731		
2624146004	**YGWC-41**	EPA 300.0	36731		
2624146005	**YGWC-42**	EPA 300.0	36731		
2624146006	**YGWC-43**	EPA 300.0	36731		
2624146001	**YGWA-39**	EPA 300.0	36938		
2624146002	**YGWA-40**	EPA 300.0	36938		
2624146003	**YGWC-38**	EPA 300.0	36938		

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Yates AP Addition. Para.
Pace Project No.: 2624146

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624146004	**YGWC-41**	EPA 300.0	36938		
2624146005	**YGWC-42**	EPA 300.0	36938		
2624146006	**YGWC-43**	EPA 300.0	36938		
2624146001	**YGWA-39**	SM 5310B	579958		
2624146002	**YGWA-40**	SM 5310B	579958		
2624146003	**YGWC-38**	SM 5310B	579958		
2624146004	**YGWC-41**	SM 5310B	579960		
2624146005	**YGWC-42**	SM 5310B	579960		
2624146006	**YGWC-43**	SM 5310B	579960		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	ACC	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Yates AP Additional Parameters R6	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	335.6

Regulatory Agency: | State / Location: GA

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Metals *	Alkalinity (carb + bicarb)	NO3, Cl, SO4, F	TOC (total organic carbon)	Ortho Phosphorus *	Sulfide	Ferric Iron	Residual Chlorine (Y/N)	$(Fe^{2+})_{mg/L}$
1	YGWA-39	W	G	10/9/19		10:45			7										✓	✓	✓	✓	✓	✓	✓		Fe^{2+} = 1.5
2	YGWA-40	W	G	10/9/19		09:46			7										✓	✓	✓	✓	✓	✓	✓		= 0.0
3	YGWC-38	W	G	10/9/19		11:16			7										✓	✓	✓	✓	✓	✓	✓		= 0.0
4	YGWC-41	W	G	10/9/19		14:02			7										✓	/	✓	✓	✓	✓	✓		= 0.3
5	YGWC-42	W	G	10/9/19		13:55			7										✓	✓	✓	✓	✓	✓	✓		= 0.0
6	YGWC-43	W	G	10/9/19		12:10			7										✓	✓	✓	✓	✓	✓	✓		↓ = 3.0
7																											
8																											
9																											* ortho was field filtered
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
* Metals list: Al,Ca,Fe,Mg,Mn,K,Na	Taylor Hall / ACC	10-9-19	1700	Charles Hunter	10/9/19	1700	1.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Chris Parker, R. Walker
SIGNATURE of SAMPLER: Chris Parker
DATE Signed: 10/9/19

WO#: 2624146

Pace Analytical

Sample Condition Upon Receipt

WO# : 2624146

Client Name: GA Power CCR

PM: BM Due Date: 10/16/19

CLIENT: GAPower-CCR

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

Tracking #: _____

Proj. Due Date:
Proj. Name:

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

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

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

Cooler Temperature 1.3°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/9/19 CH

Temp should be above freezing to 6°C Comments:

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

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. Field Filtered 12. 13.

Initial when completed	Lot # of added preservative

14. 15. 16.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

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

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

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

October 29, 2019

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

RE: Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 10, 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.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

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

Sincerely,

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

Enclosures

cc: Chris Parker, Atlantic Coast Consulting
Evan Perry, Atlantic Coast Consulting
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 Yates Ash Pond-3
Pace Project No.: 2624197

Atlanta Certification IDs

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

Asheville Certification IDs

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

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

SAMPLE SUMMARY

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624197001	**YGWA-17S**	Water	10/10/19 10:18	10/10/19 16:35
2624197002	**YGWA-5D**	Water	10/10/19 12:30	10/10/19 16:35
2624197003	**YGWA-5I**	Water	10/10/19 13:49	10/10/19 16:35
2624197004	**YGWA-20S**	Water	10/10/19 13:30	10/10/19 16:35
2624197005	**YGWA-21I**	Water	10/10/19 14:30	10/10/19 16:35

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

SAMPLE ANALYTE COUNT

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624197001	**YGWA-17S**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A
2624197002	**YGWA-5D**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	ANB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A
2624197003	**YGWA-5I**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	ANB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A
2624197004	**YGWA-20S**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	ANB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A
2624197005	**YGWA-21I**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	ANB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A

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ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

Sample: YGWA-17S **Lab ID: 2624197001** Collected: 10/10/19 10:18 Received: 10/10/19 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/18/19 12:10		
Iron, Ferrous	**0**	mg/L			1		10/18/19 12:10		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.040J**	mg/L	0.10	0.032	1	10/14/19 15:50	10/17/19 23:55	7429-90-5	
Calcium	**2.4**	mg/L	0.50	0.14	1	10/14/19 15:50	10/17/19 23:55	7440-70-2	
Iron	**0.026J**	mg/L	0.040	0.015	1	10/14/19 15:50	10/17/19 23:55	7439-89-6	
Magnesium	**0.85**	mg/L	0.050	0.011	1	10/14/19 15:50	10/17/19 23:55	7439-95-4	
Manganese	**0.0085J**	mg/L	0.040	0.0061	1	10/14/19 15:50	10/17/19 23:55	7439-96-5	
Potassium	**0.38**	mg/L	0.20	0.026	1	10/14/19 15:50	10/17/19 23:55	7440-09-7	
Sodium	**11.7**	mg/L	1.0	0.19	1	10/14/19 15:50	10/17/19 23:55	7440-23-5	M1
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**16.0**	mg/L	1.0	1.0	1		10/17/19 15:58		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/17/19 15:58		
Alkalinity, Total as CaCO3	**16.0**	mg/L	1.0	1.0	1		10/17/19 15:58		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/23/19 01:41	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/14/19 10:58		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.6**	mg/L	0.050	0.0050	1		10/11/19 10:26	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.8**	mg/L	1.0	0.024	1		10/16/19 18:46	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/16/19 18:46	16984-48-8	
Sulfate	**5.5**	mg/L	1.0	0.017	1		10/16/19 18:46	14808-79-8	
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	**0.62J**	mg/L	1.0	0.50	1		10/16/19 22:43	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

Sample: YGWA-5D **Lab ID: 2624197002** Collected: 10/10/19 12:30 Received: 10/10/19 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/18/19 12:10		
Iron, Ferrous	**0**	mg/L			1		10/18/19 12:10		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/14/19 15:50	10/18/19 00:24	7429-90-5	
Calcium	**24.2**	mg/L	0.50	0.14	1	10/14/19 15:50	10/18/19 00:24	7440-70-2	
Iron	**0.16**	mg/L	0.040	0.015	1	10/14/19 15:50	10/18/19 00:24	7439-89-6	
Magnesium	**4.3**	mg/L	0.050	0.011	1	10/14/19 15:50	10/18/19 00:24	7439-95-4	
Manganese	**0.52**	mg/L	0.040	0.0061	1	10/14/19 15:50	10/18/19 00:24	7439-96-5	
Potassium	**3.5**	mg/L	0.20	0.026	1	10/14/19 15:50	10/18/19 00:24	7440-09-7	
Sodium	**8.5**	mg/L	1.0	0.19	1	10/14/19 15:50	10/18/19 00:24	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**95.0**	mg/L	20.0	20.0	1		10/14/19 16:40		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/14/19 16:40		
Alkalinity, Total as CaCO3	**95.0**	mg/L	20.0	20.0	1		10/14/19 16:40		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/23/19 01:41	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.041**	mg/L	0.020	0.020	1		10/14/19 10:59		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.010J**	mg/L	0.050	0.0050	1		10/11/19 11:12	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.3**	mg/L	1.0	0.024	1		10/16/19 17:37	16887-00-6	
Fluoride	**0.16J**	mg/L	0.30	0.029	1		10/16/19 17:37	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/16/19 17:37	14808-79-8	M1
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	**0.62J**	mg/L	1.0	0.50	1		10/16/19 23:20	7440-44-0	

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ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

Sample: YGWA-5I **Lab ID: 2624197003** Collected: 10/10/19 13:49 Received: 10/10/19 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/18/19 12:10		
Iron, Ferrous	**0**	mg/L			1		10/18/19 12:10		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.062J**	mg/L	0.10	0.032	1	10/14/19 15:50	10/18/19 00:29	7429-90-5	
Calcium	**2.4**	mg/L	0.50	0.14	1	10/14/19 15:50	10/18/19 00:29	7440-70-2	
Iron	**0.056**	mg/L	0.040	0.015	1	10/14/19 15:50	10/18/19 00:29	7439-89-6	
Magnesium	**2.5**	mg/L	0.050	0.011	1	10/14/19 15:50	10/18/19 00:29	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/14/19 15:50	10/18/19 00:29	7439-96-5	
Potassium	**1.5**	mg/L	0.20	0.026	1	10/14/19 15:50	10/18/19 00:29	7440-09-7	
Sodium	**9.8**	mg/L	1.0	0.19	1	10/14/19 15:50	10/18/19 00:29	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**26.0**	mg/L	20.0	20.0	1		10/14/19 16:46		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/14/19 16:46		
Alkalinity, Total as CaCO3	**26.0**	mg/L	20.0	20.0	1		10/14/19 16:46		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/23/19 01:41	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/14/19 11:01		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.6**	mg/L	0.050	0.0050	1		10/11/19 13:30	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**1.6**	mg/L	1.0	0.024	1		10/16/19 18:39	16887-00-6	
Fluoride	**1.1**	mg/L	0.30	0.029	1		10/16/19 18:39	16984-48-8	
Sulfate	**1.8**	mg/L	1.0	0.017	1		10/16/19 18:39	14808-79-8	
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/16/19 23:33	7440-44-0	

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ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

Sample: YGWA-20S **Lab ID: 2624197004** Collected: 10/10/19 13:30 Received: 10/10/19 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/18/19 12:11		
Iron, Ferrous	**0**	mg/L			1		10/18/19 12:11		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.065J**	mg/L	0.10	0.032	1	10/14/19 15:50	10/18/19 00:34	7429-90-5	
Calcium	**2.6**	mg/L	0.50	0.14	1	10/14/19 15:50	10/18/19 00:34	7440-70-2	
Iron	**0.035J**	mg/L	0.040	0.015	1	10/14/19 15:50	10/18/19 00:34	7439-89-6	
Magnesium	**0.62**	mg/L	0.050	0.011	1	10/14/19 15:50	10/18/19 00:34	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/14/19 15:50	10/18/19 00:34	7439-96-5	
Potassium	**0.59**	mg/L	0.20	0.026	1	10/14/19 15:50	10/18/19 00:34	7440-09-7	
Sodium	**8.3**	mg/L	1.0	0.19	1	10/14/19 15:50	10/18/19 00:34	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**22.0**	mg/L	20.0	20.0	1		10/14/19 16:50		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/14/19 16:50		
Alkalinity, Total as CaCO3	**22.0**	mg/L	20.0	20.0	1		10/14/19 16:50		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/23/19 01:41	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/14/19 11:02		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.76**	mg/L	0.050	0.0050	1		10/11/19 11:35	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.7**	mg/L	1.0	0.024	1		10/16/19 18:58	16887-00-6	
Fluoride	**0.099J**	mg/L	0.30	0.029	1		10/16/19 18:58	16984-48-8	
Sulfate	**0.058J**	mg/L	1.0	0.017	1		10/16/19 18:58	14808-79-8	
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/16/19 23:43	7440-44-0	

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ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

Sample: YGWA-21I **Lab ID: 2624197005** Collected: 10/10/19 14:30 Received: 10/10/19 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/18/19 12:11		
Iron, Ferrous	**1.0**	mg/L			1		10/18/19 12:11		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/14/19 15:50	10/18/19 00:39	7429-90-5	
Calcium	**5.6**	mg/L	0.50	0.14	1	10/14/19 15:50	10/18/19 00:39	7440-70-2	
Iron	**1.6**	mg/L	0.040	0.015	1	10/14/19 15:50	10/18/19 00:39	7439-89-6	
Magnesium	**3.3**	mg/L	0.050	0.011	1	10/14/19 15:50	10/18/19 00:39	7439-95-4	
Manganese	**0.34**	mg/L	0.040	0.0061	1	10/14/19 15:50	10/18/19 00:39	7439-96-5	
Potassium	**2.9**	mg/L	0.20	0.026	1	10/14/19 15:50	10/18/19 00:39	7440-09-7	
Sodium	**17.1**	mg/L	1.0	0.19	1	10/14/19 15:50	10/18/19 00:39	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**62.0**	mg/L	20.0	20.0	1		10/14/19 16:55		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/14/19 16:55		
Alkalinity, Total as CaCO3	**62.0**	mg/L	20.0	20.0	1		10/14/19 16:55		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	**0.60**	mg/L	0.20	0.20	1		10/23/19 01:41	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/14/19 11:03		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.048J**	mg/L	0.050	0.0050	1		10/11/19 13:53	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.3**	mg/L	1.0	0.024	1		10/16/19 19:19	16887-00-6	
Fluoride	**0.11J**	mg/L	0.30	0.029	1		10/16/19 19:19	16984-48-8	
Sulfate	**3.6**	mg/L	1.0	0.017	1		10/16/19 19:19	14808-79-8	
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	**2.2**	mg/L	1.0	0.50	1		10/17/19 00:18	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

QC Batch: 36935 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2624197001, 2624197002, 2624197003, 2624197004, 2624197005

METHOD BLANK: 166932 Matrix: Water
Associated Lab Samples: 2624197001, 2624197002, 2624197003, 2624197004, 2624197005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.032	10/17/19 23:36	
Calcium	mg/L	ND	0.50	0.14	10/17/19 23:36	
Iron	mg/L	ND	0.040	0.015	10/17/19 23:36	
Magnesium	mg/L	ND	0.050	0.011	10/17/19 23:36	
Manganese	mg/L	ND	0.040	0.0061	10/17/19 23:36	
Potassium	mg/L	ND	0.20	0.026	10/17/19 23:36	
Sodium	mg/L	ND	1.0	0.19	10/17/19 23:36	

LABORATORY CONTROL SAMPLE: 166933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	0.99	99	80-120	
Calcium	mg/L	1	0.99	99	80-120	
Iron	mg/L	1	0.99	99	80-120	
Magnesium	mg/L	1	1.0	100	80-120	
Manganese	mg/L	1	0.99	99	80-120	
Potassium	mg/L	1	1.0	103	80-120	
Sodium	mg/L	1	1.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166934 166935

Parameter	Units	2624197001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	0.040J	1	1	1.0	1.0	98	99	75-125	1	20	
Calcium	mg/L	2.4	1	1	3.4	3.4	98	103	75-125	1	20	
Iron	mg/L	0.026J	1	1	1.0	1.0	98	99	75-125	1	20	
Magnesium	mg/L	0.85	1	1	1.9	1.9	100	103	75-125	2	20	
Manganese	mg/L	0.0085J	1	1	0.98	1.0	98	99	75-125	2	20	
Potassium	mg/L	0.38	1	1	1.4	1.4	100	102	75-125	1	20	
Sodium	mg/L	11.7	1	1	12.8	13.2	104	143	75-125	3	20	M1

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

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QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

QC Batch: 36911 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2624197002, 2624197003, 2624197004, 2624197005

METHOD BLANK: 166867 Matrix: Water
Associated Lab Samples: 2624197002, 2624197003, 2624197004, 2624197005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/14/19 15:24	

LABORATORY CONTROL SAMPLE: 166868

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	99.0	99	85-115	

SAMPLE DUPLICATE: 166869

Parameter	Units	2624145001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	36.0	37.0	3	10	

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

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QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

QC Batch: 37139 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2624197001

METHOD BLANK: 167862 Matrix: Water
Associated Lab Samples: 2624197001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	10/17/19 15:54	

LABORATORY CONTROL SAMPLE: 167863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	49.0	98	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.

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QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

QC Batch: 36878 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2624197001, 2624197002, 2624197003, 2624197004, 2624197005

METHOD BLANK: 166885 Matrix: Water
Associated Lab Samples: 2624197001, 2624197002, 2624197003, 2624197004, 2624197005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/14/19 10:57	

LABORATORY CONTROL SAMPLE: 166886

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.46	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166738 166739

Parameter	Units	2624197002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.041	0.5	0.5	0.44	0.44	80	80	80-120	0	10	H1

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

QC Batch: 36842 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624197001, 2624197002, 2624197003, 2624197004, 2624197005

METHOD BLANK: 166535 Matrix: Water
Associated Lab Samples: 2624197001, 2624197002, 2624197003, 2624197004, 2624197005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/11/19 07:48	

LABORATORY CONTROL SAMPLE: 166536

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166537 166538

Parameter	Units	2623811008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.010J	10	10	10.6	10.7	106	106	90-110	0	15	H1

MATRIX SPIKE SAMPLE: 166539

Parameter	Units	2623811009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	0.020J	10	10.7	107	90-110	H1

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

QC Batch: 36994
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624197001

METHOD BLANK: 167201 Matrix: Water
Associated Lab Samples: 2624197001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/16/19 12:51	
Fluoride	mg/L	ND	0.30	0.029	10/16/19 12:51	
Sulfate	mg/L	0.019J	1.0	0.017	10/16/19 12:51	

LABORATORY CONTROL SAMPLE: 167202

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.3	103	90-110	
Sulfate	mg/L	10	10.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 167203 167204

Parameter	Units	2624193002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.9	10	10	16.6	16.6	96	97	90-110	0	15	
Fluoride	mg/L	ND	10	10	9.9	10.1	99	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.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

QC Batch: 37056 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624197002, 2624197003, 2624197004, 2624197005

METHOD BLANK: 167451 Matrix: Water
Associated Lab Samples: 2624197002, 2624197003, 2624197004, 2624197005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.036J	1.0	0.024	10/16/19 16:56	
Fluoride	mg/L	ND	0.30	0.029	10/16/19 16:56	
Sulfate	mg/L	ND	1.0	0.017	10/16/19 16:56	

LABORATORY CONTROL SAMPLE: 167452

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.8	108	90-110	
Sulfate	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 167453 167454

Parameter	Units	2624197002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.3	10	10	14.1	14.5	98	102	90-110	3	15	
Fluoride	mg/L	0.16J	10	10	10.5	10.8	103	106	90-110	3	15	
Sulfate	mg/L	ND	10	10	15.7	16.0	157	160	90-110	1	15	M1

MATRIX SPIKE SAMPLE: 167455

Parameter	Units	2624212004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.0	10	15.3	103	90-110	
Fluoride	mg/L	0.13J	10	11.2	110	90-110	
Sulfate	mg/L	9.2	10	18.9	97	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

QC Batch: 504010 Analysis Method: SM 5310B-2011
QC Batch Method: SM 5310B-2011 Analysis Description: 5310B TOC
Associated Lab Samples: 2624197001, 2624197002, 2624197003, 2624197004, 2624197005

METHOD BLANK: 2708859 Matrix: Water
Associated Lab Samples: 2624197001, 2624197002, 2624197003, 2624197004, 2624197005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/16/19 22:03	

LABORATORY CONTROL SAMPLE: 2708860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.2	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2708861 2708862

Parameter	Units	2624197001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.62J	25	25	25.0	25.3	98	99	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2708863 2708864

Parameter	Units	2624212002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	24.6	24.6	97	97	90-110	0	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-GA	Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

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.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

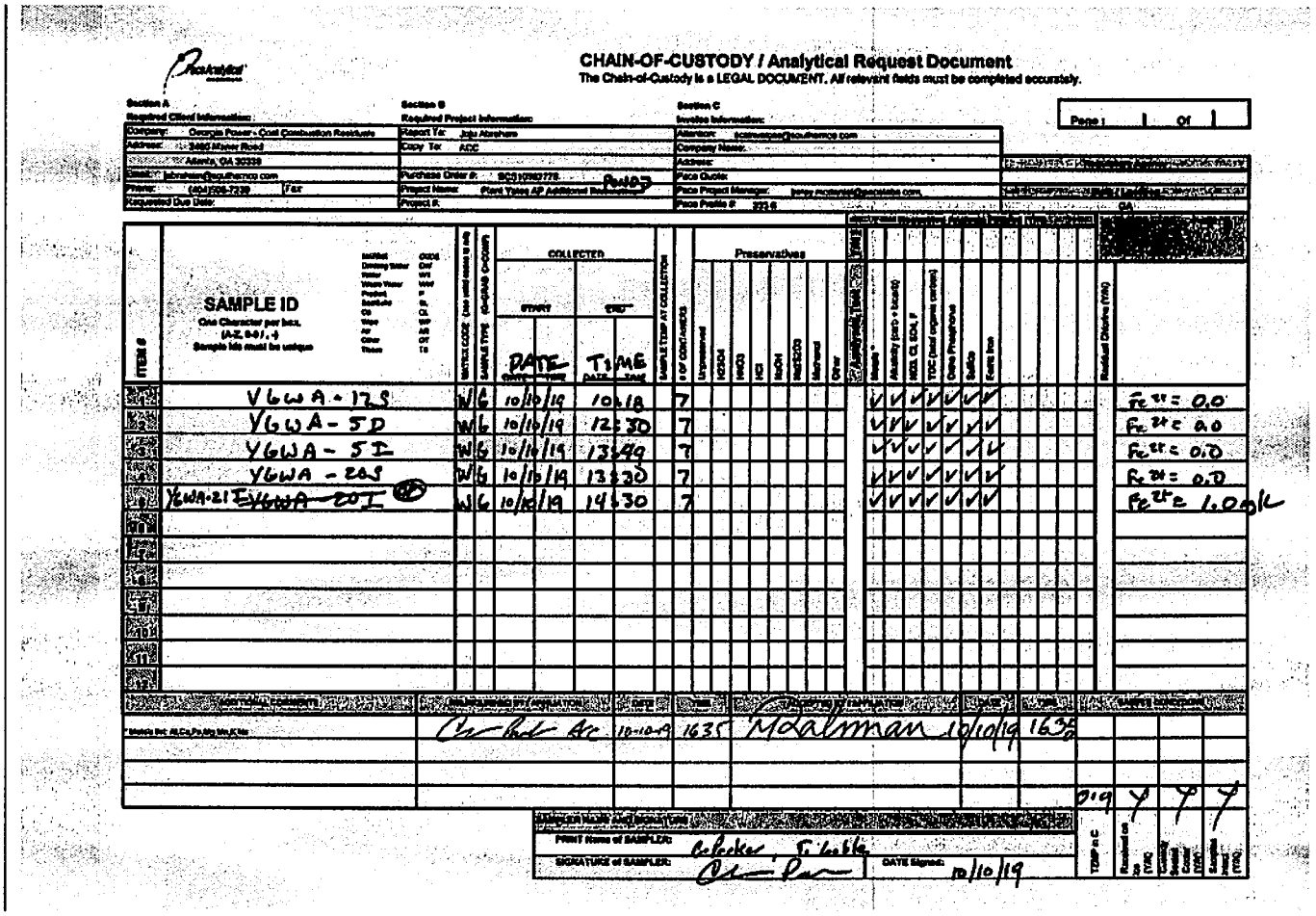
Project: Plant Yates Ash Pond-3
Pace Project No.: 2624197

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624197001	**YGWA-17S**				
2624197002	**YGWA-5D**				
2624197003	**YGWA-5I**				
2624197004	**YGWA-20S**				
2624197005	**YGWA-21I**				
2624197001	**YGWA-17S**	EPA 3010A	36935	EPA 6010D	36942
2624197002	**YGWA-5D**	EPA 3010A	36935	EPA 6010D	36942
2624197003	**YGWA-5I**	EPA 3010A	36935	EPA 6010D	36942
2624197004	**YGWA-20S**	EPA 3010A	36935	EPA 6010D	36942
2624197005	**YGWA-21I**	EPA 3010A	36935	EPA 6010D	36942
2624197002	**YGWA-5D**	SM 2320B	36911		
2624197003	**YGWA-5I**	SM 2320B	36911		
2624197004	**YGWA-20S**	SM 2320B	36911		
2624197005	**YGWA-21I**	SM 2320B	36911		
2624197001	**YGWA-17S**	SM 2320B	37139		
2624197001	**YGWA-17S**	SM 3500 Fe -Fe2	37389		
2624197002	**YGWA-5D**	SM 3500 Fe -Fe2	37389		
2624197003	**YGWA-5I**	SM 3500 Fe -Fe2	37389		
2624197004	**YGWA-20S**	SM 3500 Fe -Fe2	37389		
2624197005	**YGWA-21I**	SM 3500 Fe -Fe2	37389		
2624197001	**YGWA-17S**	SM 4500-P	36878		
2624197002	**YGWA-5D**	SM 4500-P	36878		
2624197003	**YGWA-5I**	SM 4500-P	36878		
2624197004	**YGWA-20S**	SM 4500-P	36878		
2624197005	**YGWA-21I**	SM 4500-P	36878		
2624197001	**YGWA-17S**	EPA 300.0	36842		
2624197002	**YGWA-5D**	EPA 300.0	36842		
2624197003	**YGWA-5I**	EPA 300.0	36842		
2624197004	**YGWA-20S**	EPA 300.0	36842		
2624197005	**YGWA-21I**	EPA 300.0	36842		
2624197001	**YGWA-17S**	EPA 300.0	36994		
2624197002	**YGWA-5D**	EPA 300.0	37056		
2624197003	**YGWA-5I**	EPA 300.0	37056		
2624197004	**YGWA-20S**	EPA 300.0	37056		
2624197005	**YGWA-21I**	EPA 300.0	37056		
2624197001	**YGWA-17S**	SM 5310B-2011	504010		
2624197002	**YGWA-5D**	SM 5310B-2011	504010		
2624197003	**YGWA-5I**	SM 5310B-2011	504010		
2624197004	**YGWA-20S**	SM 5310B-2011	504010		
2624197005	**YGWA-21I**	SM 5310B-2011	504010		

Sent from my iPhone

Begin forwarded message:

From: Christopher Parker <cdparker20@icloud.com>
Date: October 10, 2019 at 6:15:11 PM EDT
To: Chris Parker <chris.parker@atlcc.net>



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test	Residual Chlorine (Y/N)	Remarks
1	Y6WA-12S	WG		10/10/19	10:18				7									✓		Fe^{2+} = 0.0
2	Y6WA-5D	WG		10/10/19	12:30				7									✓		Fe^{2+} = 0.0
3	Y6WA-5I	WG		10/10/19	13:49				7									✓		Fe^{2+} = 0.0
4	Y6WA-20S	WG		10/10/19	13:30				7									✓		Fe^{2+} = 0.0
5	Y6WA-21I Y6WA-20I	WG		10/10/19	14:30				7									✓		Fe^{2+} = 1.00
6																				
7																				
8																				
9																				
10																				
11																				

	Chris Parker Atlcc	10-10-19	1635	MDahman 10/10/19	1635

PRINT Name of SAMPLER: CParker, F. Lobb

SIGNATURE of SAMPLER: DATE Signed: 10/10/19

Temp °C: 0.9

Received on Ice: Y

Custody Seals: Y

Samples Intact: Y

WO# : 2624197

2624197

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2624197

PM: BM Due Date: 10/17/19

CLIENT: GAPower-CCR

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

Tracking #:

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

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

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

Cooler Temperature 0.9 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/10/19 MR

Comments:

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

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

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

October 17, 2019

Betsy McDaniel
Pace Analytical Services, Inc

110 Technology Pkwy
Peachtree Corners GA 30092

RE: 2624197

Dear Betsy McDaniel: Order No: 1910G12

Analytical Environmental Services, Inc. received 5 samples on 10/16/2019 12:54:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/19-06/30/20.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective through 06/30/20 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/21.
These results relate only to the items tested as received. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Jessica Shilling

Jessica Shilling

Project Manager

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

1910G12

Chain of Custody

PASI Atlanta Laboratory

Pace Analytical®
www.pacelabs.com

Workorder: 2624197 **Workorder Name:** Plant Yates Ash Pond-3 **Results Requested By:** 10/17/2019

Report / Invoice To	Subcontract To
Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)734-4200 Email: betsy.mcdaniel@pacelabs.com	P.O._____ Analytical Environmental Services 3080 Presidential Dr, Atlanta, GA 30340

State of Sample Origin: GA

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	4500S2D Sulfide Water	LAB USE ONLY
1	YGWA-17S	10/10/2019 10:18	2624197001	Water		X	
2	YGWA-5D	10/10/2019 12:30	2624197002	Water		X	
3	YGWA-5I	10/10/2019 13:49	2624197003	Water		X	
4	YGWA-20S	10/10/2019 13:30	2624197004	Water		X	
5	YGWA-21I	10/10/2019 14:30	2624197005	Water		X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	M Dalman	10/16/19	[illegible]	10/16/19 1254
2				
3				

Comments

Cooler Temperature on Receipt °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

Wednesday, October 16, 2019 10:10:27 AM FMT-ALL-C-002rev.00 24March2009 Page 1 of 1

Analytical Environmental Services, Inc **Date:** 17-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWA-17S
Project Name:	2624197	**Collection Date:**	10/10/2019 10:18:00 AM
Lab ID:	1910G12-001	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWA-5D
Project Name:	2624197	**Collection Date:**	10/10/2019 12:30:00 PM
Lab ID:	1910G12-002	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWA-5I
Project Name:	2624197	**Collection Date:**	10/10/2019 1:49:00 PM
Lab ID:	1910G12-003	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWA-20S
Project Name:	2624197	**Collection Date:**	10/10/2019 1:30:00 PM
Lab ID:	1910G12-004	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWA-21I
Project Name:	2624197	**Collection Date:**	10/10/2019 2:30:00 PM
Lab ID:	1910G12-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Clear Save as

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Pace Analytical Services, Inc.** AES Work Order Number: **1910G12**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ■ Courier ☐ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	◉	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	◉	○	○		
5.	Custody seals intact on shipping container?	◉	○	○		
6.	Temperature blanks present?	◉	○	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	◉	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	◉	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	◉	○	○		
10.	Sampler name and/or signature on COC?	○	◉	○		
11.	Were all samples received within holding time?	◉	○	○		
12.	TAT marked on the COC?	◉	○	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 0.9 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). AP 10/16/19

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	◉	○	○		
17.	Custody seals present on sample containers?	○	◉	○		
18.	Custody seals intact on sample containers?	○	○	◉		
19.	Do sample container labels match the COC?	◉	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	◉	○	○		
21.	Were all of the samples listed on the COC received?	◉	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	◉	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	◉	○	○		
24.	Were samples received in appropriate containers?	◉	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	○	○	◉		
26.	Were trip blanks submitted?	○	○	◉	listed on COC ☐ not listed on COC ☐	

27. Comments: _____

I certify that I have completed sections 16-27 (dated initials). AP 10/16/19

This section only applies to samples where pH can be checked at Sample Receipt.

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	◉	○	○		
29.	Containers meet preservation guidelines?	◉	○	○		
30.	Was pH adjusted at Sample Receipt?	○	○	◉		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials). AP 10/16/19

Locked

Client: Pace Analytical Services, Inc
Project Name: 2624197
Lab Order: 1910G12

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1910G12-001A	YGWA-17S	10/10/2019 10:18:00AM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019
1910G12-002A	YGWA-5D	10/10/2019 12:30:00PM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019
1910G12-003A	YGWA-5I	10/10/2019 1:49:00PM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019
1910G12-004A	YGWA-20S	10/10/2019 1:30:00PM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019
1910G12-005A	YGWA-21I	10/10/2019 2:30:00PM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019

Client: Pace Analytical Services, Inc
Project Name: 2624197
Workorder: 1910G12

ANALYTICAL QC SUMMARY REPORT

BatchID: R409476

Sample ID: **MB-R409476**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **409476**	
SampleType: **MBLK**	TestCode: **Sulfide by SM4500-S2-F**				BatchID: **R409476**		Analysis Date: **10/17/2019**		Seq No: **9211965**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	BRL	1.00									

Sample ID: **LCS-R409476**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **409476**	
SampleType: **LCS**	TestCode: **Sulfide by SM4500-S2-F**				BatchID: **R409476**		Analysis Date: **10/17/2019**		Seq No: **9212009**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	148.0	1.00	148.0		100	90	110				

Sample ID: **1910E30-001AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **409476**	
SampleType: **MS**	TestCode: **Sulfide by SM4500-S2-F**				BatchID: **R409476**		Analysis Date: **10/17/2019**		Seq No: **9211986**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	36.00	1.00	14.80	20.00	108	80	120				

Sample ID: **1910E30-001AMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **409476**	
SampleType: **MSD**	TestCode: **Sulfide by SM4500-S2-F**				BatchID: **R409476**		Analysis Date: **10/17/2019**		Seq No: **9211989**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	32.00	1.00	14.80	20.00	81.1	80	120	36.00	11.8	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

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 Yates Ash Pond-3
Pace Project No.: 2624212

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 11, 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.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

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

Sincerely,

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

Enclosures

cc: Chris Parker, Atlantic Coast Consulting
Evan Perry, Atlantic Coast Consulting
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 Yates Ash Pond-3
Pace Project No.: 2624212

Atlanta Certification IDs

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

Asheville Certification IDs

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

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

SAMPLE SUMMARY

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624212001	**YGWC-24S**	Water	10/10/19 15:09	10/11/19 10:08
2624212002	**YGWC-36**	Water	10/10/19 16:16	10/11/19 10:08
2624212003	**YGWC-23S**	Water	10/10/19 17:56	10/11/19 10:08
2624212004	**YGWA-4I**	Water	10/10/19 15:07	10/11/19 10:08
2624212005	**YGWC-49**	Water	10/10/19 16:35	10/11/19 10:08

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SAMPLE ANALYTE COUNT

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624212001	**YGWC-24S**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	ANB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A
2624212002	**YGWC-36**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	ANB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A
2624212003	**YGWC-23S**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	ANB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A
2624212004	**YGWA-4I**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	ANB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A
2624212005	**YGWC-49**	EPA 6010D	KLH	7	PASI-GA
		SM 2320B	S1A	3	PASI-GA
		SM 3500 Fe -Fe2	LPH	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		EPA 300.0	MWB	1	PASI-GA
		EPA 300.0	ANB	3	PASI-GA
		SM 5310B-2011	ECH	1	PASI-A

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ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

Sample: YGWC-24S **Lab ID: 2624212001** Collected: 10/10/19 15:09 Received: 10/11/19 10:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/10/19 15:09		
Iron, Ferrous	**0.0 mg/l**	mg/L			1		10/10/19 15:09		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/14/19 15:50	10/18/19 00:44	7429-90-5	
Calcium	**1.7**	mg/L	0.50	0.14	1	10/14/19 15:50	10/18/19 00:44	7440-70-2	
Iron	ND	mg/L	0.040	0.015	1	10/14/19 15:50	10/18/19 00:44	7439-89-6	
Magnesium	**1.3**	mg/L	0.050	0.011	1	10/14/19 15:50	10/18/19 00:44	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/14/19 15:50	10/18/19 00:44	7439-96-5	
Potassium	**0.61**	mg/L	0.20	0.026	1	10/14/19 15:50	10/18/19 00:44	7440-09-7	
Sodium	**7.9**	mg/L	1.0	0.19	1	10/14/19 15:50	10/18/19 00:44	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**13.0**	mg/L	1.0	1.0	1		10/17/19 12:04		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/17/19 12:04		
Alkalinity, Total as CaCO3	**13.0**	mg/L	1.0	1.0	1		10/17/19 12:04		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/23/19 01:53	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/14/19 11:06		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.5**	mg/L	0.050	0.0050	1		10/11/19 20:11	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.8**	mg/L	1.0	0.024	1		10/16/19 20:42	16887-00-6	
Fluoride	**0.030J**	mg/L	0.30	0.029	1		10/16/19 20:42	16984-48-8	
Sulfate	**0.21J**	mg/L	1.0	0.017	1		10/16/19 20:42	14808-79-8	
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/17/19 01:15	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

Sample: YGWC-36 **Lab ID: 2624212002** Collected: 10/10/19 16:16 Received: 10/11/19 10:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/10/19 16:16		
Iron, Ferrous	**0.0 mg/l**	mg/L			1		10/10/19 16:16		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/14/19 15:50	10/18/19 00:48	7429-90-5	
Calcium	**12.2**	mg/L	0.50	0.14	1	10/14/19 15:50	10/18/19 00:48	7440-70-2	
Iron	**0.028J**	mg/L	0.040	0.015	1	10/14/19 15:50	10/18/19 00:48	7439-89-6	
Magnesium	**7.4**	mg/L	0.050	0.011	1	10/14/19 15:50	10/18/19 00:48	7439-95-4	
Manganese	**0.062**	mg/L	0.040	0.0061	1	10/14/19 15:50	10/18/19 00:48	7439-96-5	
Potassium	**1.9**	mg/L	0.20	0.026	1	10/14/19 15:50	10/18/19 00:48	7440-09-7	
Sodium	**18.2**	mg/L	1.0	0.19	1	10/14/19 15:50	10/18/19 00:48	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**12.0**	mg/L	1.0	1.0	1		10/17/19 12:09		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/17/19 12:09		
Alkalinity, Total as CaCO3	**12.0**	mg/L	1.0	1.0	1		10/17/19 12:09		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/23/19 01:53	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/14/19 11:07		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.6**	mg/L	0.050	0.0050	1		10/11/19 20:32	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	ND	mg/L	1.0	0.024	1		10/17/19 18:42	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/17/19 18:42	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/17/19 18:42	14808-79-8	
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/17/19 01:26	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
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ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

Sample: YGWC-23S **Lab ID: 2624212003** Collected: 10/10/19 17:56 Received: 10/11/19 10:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/10/19 17:56		
Iron, Ferrous	**0.0 mg/l**	mg/L			1		10/10/19 17:56		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.078J**	mg/L	0.10	0.032	1	10/14/19 15:50	10/18/19 00:53	7429-90-5	
Calcium	**3.6**	mg/L	0.50	0.14	1	10/14/19 15:50	10/18/19 00:53	7440-70-2	
Iron	**0.080**	mg/L	0.040	0.015	1	10/14/19 15:50	10/18/19 00:53	7439-89-6	
Magnesium	**3.1**	mg/L	0.050	0.011	1	10/14/19 15:50	10/18/19 00:53	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/14/19 15:50	10/18/19 00:53	7439-96-5	
Potassium	**0.72**	mg/L	0.20	0.026	1	10/14/19 15:50	10/18/19 00:53	7440-09-7	
Sodium	**7.0**	mg/L	1.0	0.19	1	10/14/19 15:50	10/18/19 00:53	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**7.0**	mg/L	1.0	1.0	1		10/17/19 12:14		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/17/19 12:14		
Alkalinity, Total as CaCO3	**7.0**	mg/L	1.0	1.0	1		10/17/19 12:14		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/23/19 01:53	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/14/19 11:08		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.081**	mg/L	0.050	0.0050	1		10/11/19 20:53	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.0**	mg/L	1.0	0.024	1		10/16/19 22:23	16887-00-6	
Fluoride	**0.11J**	mg/L	0.30	0.029	1		10/16/19 22:23	16984-48-8	
Sulfate	**29.5**	mg/L	1.0	0.017	1		10/16/19 22:23	14808-79-8	
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/17/19 02:02	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

Sample: YGWA-4I **Lab ID: 2624212004** Collected: 10/10/19 15:07 Received: 10/11/19 10:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/10/19 15:07		
Iron, Ferrous	**0.0 mg/l**	mg/L			1		10/10/19 15:07		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/14/19 15:50	10/18/19 01:08	7429-90-5	
Calcium	**9.9**	mg/L	0.50	0.14	1	10/14/19 15:50	10/18/19 01:08	7440-70-2	
Iron	ND	mg/L	0.040	0.015	1	10/14/19 15:50	10/18/19 01:08	7439-89-6	
Magnesium	**5.7**	mg/L	0.050	0.011	1	10/14/19 15:50	10/18/19 01:08	7439-95-4	
Manganese	**0.0089J**	mg/L	0.040	0.0061	1	10/14/19 15:50	10/18/19 01:08	7439-96-5	
Potassium	**4.1**	mg/L	0.20	0.026	1	10/14/19 15:50	10/18/19 01:08	7440-09-7	
Sodium	**9.5**	mg/L	1.0	0.19	1	10/14/19 15:50	10/18/19 01:08	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**64.0**	mg/L	20.0	20.0	1		10/15/19 13:57		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/15/19 13:57		
Alkalinity, Total as CaCO3	**64.0**	mg/L	20.0	20.0	1		10/15/19 13:57		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/23/19 01:53	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/14/19 11:09		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.72**	mg/L	0.050	0.0050	1		10/11/19 22:32	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.0**	mg/L	1.0	0.024	1		10/16/19 22:44	16887-00-6	
Fluoride	**0.13J**	mg/L	0.30	0.029	1		10/16/19 22:44	16984-48-8	
Sulfate	**9.2**	mg/L	1.0	0.017	1		10/16/19 22:44	14808-79-8	
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	**0.55J**	mg/L	1.0	0.50	1		10/17/19 02:57	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

Sample: YGWC-49 **Lab ID: 2624212005** Collected: 10/10/19 16:35 Received: 10/11/19 10:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/10/19 16:35		
Iron, Ferrous	**0.0 mg/l**	mg/L			1		10/10/19 16:35		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/14/19 15:50	10/18/19 01:13	7429-90-5	
Calcium	**12.6**	mg/L	0.50	0.14	1	10/14/19 15:50	10/18/19 01:13	7440-70-2	
Iron	**0.088**	mg/L	0.040	0.015	1	10/14/19 15:50	10/18/19 01:13	7439-89-6	
Magnesium	**8.9**	mg/L	0.050	0.011	1	10/14/19 15:50	10/18/19 01:13	7439-95-4	
Manganese	**0.0076J**	mg/L	0.040	0.0061	1	10/14/19 15:50	10/18/19 01:13	7439-96-5	
Potassium	**1.9**	mg/L	0.20	0.026	1	10/14/19 15:50	10/18/19 01:13	7440-09-7	
Sodium	**17.2**	mg/L	1.0	0.19	1	10/14/19 15:50	10/18/19 01:13	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**14.2**	mg/L	1.0	1.0	1		10/17/19 12:21		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/17/19 12:21		
Alkalinity, Total as CaCO3	**14.2**	mg/L	1.0	1.0	1		10/17/19 12:21		
Iron, Ferric (Calculation)	Analytical Method: SM 3500 Fe -Fe2								
Iron, Ferric	ND	mg/L	0.20	0.20	1		10/23/19 01:53	7439-89-6	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/14/19 11:09		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.1**	mg/L	0.050	0.0050	1		10/11/19 22:52	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.3**	mg/L	1.0	0.024	1		10/16/19 23:25	16887-00-6	
Fluoride	**0.090J**	mg/L	0.30	0.029	1		10/16/19 23:25	16984-48-8	
Sulfate	**79.5**	mg/L	10.0	0.17	10		10/17/19 19:23	14808-79-8	
5310B TOC	Analytical Method: SM 5310B-2011								
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/17/19 03:09	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

QC Batch: 36935 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

METHOD BLANK: 166932 Matrix: Water
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.032	10/17/19 23:36	
Calcium	mg/L	ND	0.50	0.14	10/17/19 23:36	
Iron	mg/L	ND	0.040	0.015	10/17/19 23:36	
Magnesium	mg/L	ND	0.050	0.011	10/17/19 23:36	
Manganese	mg/L	ND	0.040	0.0061	10/17/19 23:36	
Potassium	mg/L	ND	0.20	0.026	10/17/19 23:36	
Sodium	mg/L	ND	1.0	0.19	10/17/19 23:36	

LABORATORY CONTROL SAMPLE: 166933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	0.99	99	80-120	
Calcium	mg/L	1	0.99	99	80-120	
Iron	mg/L	1	0.99	99	80-120	
Magnesium	mg/L	1	1.0	100	80-120	
Manganese	mg/L	1	0.99	99	80-120	
Potassium	mg/L	1	1.0	103	80-120	
Sodium	mg/L	1	1.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166934 166935

Parameter	Units	2624197001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	0.040J	1	1	1.0	1.0	98	99	75-125	1	20	
Calcium	mg/L	2.4	1	1	3.4	3.4	98	103	75-125	1	20	
Iron	mg/L	0.026J	1	1	1.0	1.0	98	99	75-125	1	20	
Magnesium	mg/L	0.85	1	1	1.9	1.9	100	103	75-125	2	20	
Manganese	mg/L	0.0085J	1	1	0.98	1.0	98	99	75-125	2	20	
Potassium	mg/L	0.38	1	1	1.4	1.4	100	102	75-125	1	20	
Sodium	mg/L	11.7	1	1	12.8	13.2	104	143	75-125	3	20	M1

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

QC Batch: 36978
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2624212004

METHOD BLANK: 167115 Matrix: Water
Associated Lab Samples: 2624212004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/15/19 12:36	

LABORATORY CONTROL SAMPLE: 167116

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

SAMPLE DUPLICATE: 167128

Parameter	Units	2624285001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	52.0	51.0	2	10	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

QC Batch: 37108 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212005

METHOD BLANK: 167721 Matrix: Water
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	10/17/19 11:36	

LABORATORY CONTROL SAMPLE: 167722

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	49.0	98	85-115	

SAMPLE DUPLICATE: 167723

Parameter	Units	2624146002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	9.5	9.5	0	10	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

QC Batch: 36878 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

METHOD BLANK: 166885 Matrix: Water
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/14/19 10:57	

LABORATORY CONTROL SAMPLE: 166886

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.46	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166738 166739

Parameter	Units	2624197002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.041	0.5	0.5	0.44	0.44	80	80	80-120	0	10	H1

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

QC Batch: 36873 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

METHOD BLANK: 166699 Matrix: Water
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/11/19 17:27	

LABORATORY CONTROL SAMPLE: 166700

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166701 166702

Parameter	Units	2624218001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	8.3			16.7	16.9				1	15	M1

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

QC Batch: 37056 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

METHOD BLANK: 167451 Matrix: Water
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.036J	1.0	0.024	10/16/19 16:56	
Fluoride	mg/L	ND	0.30	0.029	10/16/19 16:56	
Sulfate	mg/L	ND	1.0	0.017	10/16/19 16:56	

LABORATORY CONTROL SAMPLE: 167452

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.8	108	90-110	
Sulfate	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 167453 167454

Parameter	Units	2624197002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.3	10	10	14.1	14.5	98	102	90-110	3	15	
Fluoride	mg/L	0.16J	10	10	10.5	10.8	103	106	90-110	3	15	
Sulfate	mg/L	ND	10	10	15.7	16.0	157	160	90-110	1	15	M1

MATRIX SPIKE SAMPLE: 167455

Parameter	Units	2624212004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.0	10	15.3	103	90-110	
Fluoride	mg/L	0.13J	10	11.2	110	90-110	
Sulfate	mg/L	9.2	10	18.9	97	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

QC Batch: 504010 Analysis Method: SM 5310B-2011
QC Batch Method: SM 5310B-2011 Analysis Description: 5310B TOC
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

METHOD BLANK: 2708859 Matrix: Water
Associated Lab Samples: 2624212001, 2624212002, 2624212003, 2624212004, 2624212005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/16/19 22:03	

LABORATORY CONTROL SAMPLE: 2708860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.2	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2708861 2708862

Parameter	Units	2624197001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.62J	25	25	25.0	25.3	98	99	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2708863 2708864

Parameter	Units	2624212002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	ND	25	25	24.6	24.6	97	97	90-110	0	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-GA	Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

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.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Yates Ash Pond-3
Pace Project No.: 2624212

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624212001	**YGWC-24S**				
2624212002	**YGWC-36**				
2624212003	**YGWC-23S**				
2624212004	**YGWA-4I**				
2624212005	**YGWC-49**				
2624212001	**YGWC-24S**	EPA 3010A	36935	EPA 6010D	36942
2624212002	**YGWC-36**	EPA 3010A	36935	EPA 6010D	36942
2624212003	**YGWC-23S**	EPA 3010A	36935	EPA 6010D	36942
2624212004	**YGWA-4I**	EPA 3010A	36935	EPA 6010D	36942
2624212005	**YGWC-49**	EPA 3010A	36935	EPA 6010D	36942
2624212004	**YGWA-4I**	SM 2320B	36978		
2624212001	**YGWC-24S**	SM 2320B	37108		
2624212002	**YGWC-36**	SM 2320B	37108		
2624212003	**YGWC-23S**	SM 2320B	37108		
2624212005	**YGWC-49**	SM 2320B	37108		
2624212001	**YGWC-24S**	SM 3500 Fe -Fe2	37390		
2624212002	**YGWC-36**	SM 3500 Fe -Fe2	37390		
2624212003	**YGWC-23S**	SM 3500 Fe -Fe2	37390		
2624212004	**YGWA-4I**	SM 3500 Fe -Fe2	37390		
2624212005	**YGWC-49**	SM 3500 Fe -Fe2	37390		
2624212001	**YGWC-24S**	SM 4500-P	36878		
2624212002	**YGWC-36**	SM 4500-P	36878		
2624212003	**YGWC-23S**	SM 4500-P	36878		
2624212004	**YGWA-4I**	SM 4500-P	36878		
2624212005	**YGWC-49**	SM 4500-P	36878		
2624212001	**YGWC-24S**	EPA 300.0	36873		
2624212002	**YGWC-36**	EPA 300.0	36873		
2624212003	**YGWC-23S**	EPA 300.0	36873		
2624212004	**YGWA-4I**	EPA 300.0	36873		
2624212005	**YGWC-49**	EPA 300.0	36873		
2624212001	**YGWC-24S**	EPA 300.0	37056		
2624212002	**YGWC-36**	EPA 300.0	37056		
2624212003	**YGWC-23S**	EPA 300.0	37056		
2624212004	**YGWA-4I**	EPA 300.0	37056		
2624212005	**YGWC-49**	EPA 300.0	37056		
2624212001	**YGWC-24S**	SM 5310B-2011	504010		
2624212002	**YGWC-36**	SM 5310B-2011	504010		
2624212003	**YGWC-23S**	SM 5310B-2011	504010		
2624212004	**YGWA-4I**	SM 5310B-2011	504010		
2624212005	**YGWC-49**	SM 5310B-2011	504010		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	ACC	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775 Round 3	Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Yates AP Additional ~~Supplemental~~	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	335.6

Regulatory Agency: | State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED ~~START~~ DATE	COLLECTED ~~START~~ TIME	COLLECTED ~~END~~ DATE	COLLECTED ~~END~~ TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Metals *	Alkalinity (carb + bicarb)	NO3, Cl, SO4, F	TOC (total organic carbon)	Ortho Phosphorus	Sulfide	Ferric Iron	Residual Chlorine (Y/N)	
1	YGWC-245	WW	G	10-10-19	1509				7										✓	✓	✓	✓	✓	✓	✓		$Fe^{2+} = 0.0$ mg/L
2	YGWC-36	W	G	10-10-19	1616				7										✓	✓	✓	✓	✓	✓	✓		$Fe^{2+} = 0.0$ mg/L
3	YGWC-235	W	G	10-10-19	1756				7										✓	✓	✓	✓	✓	✓	✓		$Fe^{2+} = 0.0$ mg/L
4	YGWA-4I	W	G	10-10-19	1507				7										✓	✓	✓	✓	✓	✓	✓		$Fe^{2+} = 0.0$ mg/L
5	YGWC-49	W	G	10-10-19	1635				7										✓	✓	✓	✓	✓	✓	✓		$Fe^{2+} = 0.0$ mg/L
6																											
7																											
8																											
9																											
10																											
11																											
12																											

WO# : 2624212

2624212

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* Metals list: Al,Ca,Fe,Mg,Mn,K,Na	Ryan Walker ACC	10.11.19	1008	MDaniel	10/11/19	1008	1.7	Y	Y	Y

SAMPLER NAME AND SIGNATURE:

PRINT Name of SAMPLER: Taylor Gobler / Ryan Walker

SIGNATURE of SAMPLER: Taylor Gobler Ryan Walker DATE Signed: 10-10-19

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

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

WO#: 2624212

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

Tracking #:

PM: BM **Due Date: 10/18/19**

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes [**CLIENT: GAPower-CCR**

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

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

Cooler Temperature 1.7 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/11/19 MP

Comments:

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

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

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

October 18, 2019

Betsy McDaniel
Pace Analytical Services, Inc

110 Technology Pkwy
Peachtree Corners GA 30092

RE: 2624212

Dear Betsy McDaniel: Order No: 1910G13

Analytical Environmental Services, Inc. received 5 samples on 10/16/2019 12:54:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/19-06/30/20.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective through 06/30/20 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/21.
These results relate only to the items tested as received. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Jessica Shilling

Jessica Shilling

Project Manager

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

1910G13

Chain of Custody

PASI Atlanta Laboratory

Pace Analytical®
www.pacelabs.com

Workorder: 2624212 **Workorder Name:** Plant Yates Ash Pond-3 **Results Requested By:** 10/18/2019

Report / Invoice To	Subcontract To
Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)734-4200 Email: betsy.mcdaniel@pacelabs.com	P.O._____ Analytical Environmental Services 3080 Presidential Dr, Atlanta, GA 30340

State of Sample Origin: GA

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	4500S2D Sulfide Water	LAB USE ONLY
1	YGWC-24S	10/10/2019 15:09	2624212001	Water		X	
2	YGWC-36	10/10/2019 16:16	2624212002	Water		X	
3	YGWC-23S	10/10/2019 17:56	2624212003	Water		X	
4	YGWA-4I	10/10/2019 15:07	2624212004	Water		X	
5	YGWC-49	10/10/2019 16:35	2624212005	Water		X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	10/16/19	[signature] Client	10/16/19 1254
2				
3				

Comments

Cooler Temperature on Receipt ____ °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

Analytical Environmental Services, Inc **Date:** 18-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWC-24S
Project Name:	2624212	**Collection Date:**	10/10/2019 3:09:00 PM
Lab ID:	1910G13-001	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWC-36
Project Name:	2624212	**Collection Date:**	10/10/2019 4:16:00 PM
Lab ID:	1910G13-002	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWC-23S
Project Name:	2624212	**Collection Date:**	10/10/2019 5:56:00 PM
Lab ID:	1910G13-003	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWA-4I
Project Name:	2624212	**Collection Date:**	10/10/2019 3:07:00 PM
Lab ID:	1910G13-004	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Oct-19

Client:	Pace Analytical Services, Inc	**Client Sample ID:**	YGWC-49
Project Name:	2624212	**Collection Date:**	10/10/2019 4:35:00 PM
Lab ID:	1910G13-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Sulfide by SM4500-S2-F								
Sulfide	BRL	1.00		mg/L	R409476	1	10/17/2019 09:50	AT

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Clear Save as

ANALYTICAL ENVIRONMENTAL SERVICES, INC. AES

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Pace Analytical Services, Inc.** AES Work Order Number: **1910G13**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ■ Courier ☐ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	◉	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	◉	○	○		
5.	Custody seals intact on shipping container?	◉	○	○		
6.	Temperature blanks present?	◉	○	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	◉	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	◉	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	◉	○	○		
10.	Sampler name and/or signature on COC?	○	◉	○		
11.	Were all samples received within holding time?	◉	○	○		
12.	TAT marked on the COC?	◉	○	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 0.9 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). AP 10/16/19

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	◉	○	○		
17.	Custody seals present on sample containers?	○	◉	○		
18.	Custody seals intact on sample containers?	○	○	◉		
19.	Do sample container labels match the COC?	◉	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	◉	○	○		
21.	Were all of the samples listed on the COC received?	◉	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	◉	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	◉	○	○		
24.	Were samples received in appropriate containers?	◉	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	○	○	◉		
26.	Were trip blanks submitted?	○	○	◉	listed on COC ☐ not listed on COC ☐	

27. Comments: _____

I certify that I have completed sections 16-27 (dated initials). AP 10/16/19

This section only applies to samples where pH can be checked at Sample Receipt.

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	◉	○	○		
29.	Containers meet preservation guidelines?	◉	○	○		
30.	Was pH adjusted at Sample Receipt?	○	○	◉		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials). AP 10/16/19

Locked

Client: Pace Analytical Services, Inc
Project Name: 2624212
Lab Order: 1910G13

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1910G13-001A	YGWC-24S	10/10/2019 3:09:00PM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019
1910G13-002A	YGWC-36	10/10/2019 4:16:00PM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019
1910G13-003A	YGWC-23S	10/10/2019 5:56:00PM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019
1910G13-004A	YGWA-4I	10/10/2019 3:07:00PM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019
1910G13-005A	YGWC-49	10/10/2019 4:35:00PM	Aqueous	Sulfide by SM4500-S2-F			10/17/2019

Client: Pace Analytical Services, Inc
Project Name: 2624212
Workorder: 1910G13

ANALYTICAL QC SUMMARY REPORT

BatchID: R409476

Sample ID: **MB-R409476**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **409476**	
SampleType: **MBLK**	TestCode: **Sulfide by SM4500-S2-F**				BatchID: **R409476**		Analysis Date: **10/17/2019**		Seq No: **9211965**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	BRL	1.00									

Sample ID: **LCS-R409476**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **409476**	
SampleType: **LCS**	TestCode: **Sulfide by SM4500-S2-F**				BatchID: **R409476**		Analysis Date: **10/17/2019**		Seq No: **9212009**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	148.0	1.00	148.0		100	90	110				

Sample ID: **1910E30-001AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **409476**	
SampleType: **MS**	TestCode: **Sulfide by SM4500-S2-F**				BatchID: **R409476**		Analysis Date: **10/17/2019**		Seq No: **9211986**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	36.00	1.00	14.80	20.00	108	80	120				

Sample ID: **1910E30-001AMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **409476**	
SampleType: **MSD**	TestCode: **Sulfide by SM4500-S2-F**				BatchID: **R409476**		Analysis Date: **10/17/2019**		Seq No: **9211989**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	32.00	1.00	14.80	20.00	81.1	80	120	36.00	11.8	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Product Name: Low-Flow System

Date: 2019-09-26 11:01:33

Project Information:		Pump Information:	
Operator Name	Jordan Berisford	Pump Model/Type	QED Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	poly
Project Name	Plant Yates AP-3	Tubing Diameter	.17 in
Site Name	Plant Yates	Tubing Length	50 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	45 ft

Well Information:		Pumping Information:	
Well ID	PZ-35	Final Pumping Rate	175 mL/min
Well diameter	2 in	Total System Volume	0.3131711 L
Well Total Depth	50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.8 in
Depth to Water	13.27 ft	Total Volume Pumped	4.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5%	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	10:40:03	300.04	23.88	5.67	113.90	0.53	13.50	4.33	91.09
Last 5	10:45:03	600.02	23.21	5.61	115.82	0.55	13.50	4.43	100.64
Last 5	10:50:03	900.02	23.06	5.60	115.30	0.73	13.50	4.41	108.00
Last 5	10:55:03	1200.02	23.61	5.59	116.42	0.59	13.50	4.46	113.59
Last 5	11:00:05	1502.02	24.02	5.59	115.13	0.52	13.50	4.37	119.17
Variance 0			-0.15	-0.01	-0.52			-0.02	7.36
Variance 1			0.54	-0.01	1.11			0.05	5.59
Variance 2			0.41	-0.00	-1.29			-0.08	5.59

Notes

Sunny, 80s, Sample time 1100

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-26 10:10:15

Project Information:		Pump Information:	
Operator Name	Jordan Berisford	Pump Model/Type	QED Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	poly
Project Name	Plant Yates AP-3	Tubing Diameter	.17 in
Site Name	Plant Yates	Tubing Length	74 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	65 ft

Well Information:		Pumping Information:	
Well ID	YAMW-1	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.4202933 L
Well Total Depth	70.53 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	21 in
Depth to Water	13.05 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5%	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	09:45:10	1200.02	22.67	6.60	296.45	1.10	14.60	0.77	135.36
Last 5	09:50:10	1500.02	22.90	6.62	293.85	0.99	14.70	0.72	134.34
Last 5	09:55:10	1800.02	22.81	6.62	292.80	0.83	14.70	0.68	133.26
Last 5	10:00:10	2100.01	23.22	6.61	291.04	0.63	14.70	0.64	131.59
Last 5	10:05:10	2400.01	23.30	6.60	286.35	0.55	14.80	0.69	130.24
Variance 0			-0.09	0.00	-1.05			-0.04	-1.08
Variance 1			0.41	-0.01	-1.75			-0.04	-1.67
Variance 2			0.08	-0.01	-4.70			0.04	-1.35

Notes

Sunny, Sample time 1005, 80s

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 15:08:33

Project Information:		Pump Information:	
Operator Name	Taylor Goble	Pump Model/Type	Bladder Pump
Company Name	ACC	Tubing Type	Poly
Project Name	Pond 3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	50 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	HACH	Pump placement from TOC	45 ft

Well Information:		Pumping Information:	
Well ID	YGWA-4I	Final Pumping Rate	125 mL/min
Well diameter	2 in	Total System Volume	0.5726365 L
Well Total Depth	49.70 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	12 in
Depth to Water	25.16 ft	Total Volume Pumped	4.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 25
Last 5	14:42:34	600.02	18.43	6.19	154.22	0.62	25.87	2.25	27.82
Last 5	14:52:34	1200.66	18.34	6.19	156.83	0.55	25.93	1.68	21.47
Last 5	14:57:35	1501.66	18.27	6.19	156.96	0.61	26.00	1.62	19.00
Last 5	15:02:35	1801.66	18.26	6.19	156.50	0.53	26.09	1.58	17.52
Last 5	15:07:36	2102.66	18.21	6.19	156.20	--	--	1.59	16.12
Variance 0			-0.08	0.00	0.13			-0.05	-2.47
Variance 1			-0.01	-0.00	-0.47			-0.04	-1.48
Variance 2			-0.05	-0.00	-0.29			0.01	-1.40

Notes

Sampled at 1507. Sunny 80 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 12:31:40

Project Information:		Pump Information:	
Operator Name	Taylor Goble	Pump Model/Type	Bladder Pump
Company Name	ACC	Tubing Type	Poly
Project Name	Pond 3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	132 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	HACH	Pump placement from TOC	127 ft

Well Information:		Pumping Information:	
Well ID	YGWA-5D	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	1.364161 L
Well Total Depth	131.60 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1 in
Depth to Water	24.64 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 25
Last 5	12:10:19	3004.87	19.50	7.32	225.38	1.03	24.70	1.67	-63.53
Last 5	12:15:20	3305.87	19.41	7.32	221.71	1.11	24.70	1.59	-61.56
Last 5	12:20:22	3607.87	19.15	7.29	216.68	1.17	24.70	1.25	-57.03
Last 5	12:25:23	3908.79	19.11	7.26	213.86	0.96	24.70	1.19	-54.47
Last 5	12:30:23	4208.79	19.10	7.26	211.37	1.08	24.70	1.13	-48.50
Variance 0			-0.27	-0.03	-5.03			-0.34	4.53
Variance 1			-0.04	-0.03	-2.82			-0.06	2.56
Variance 2			-0.00	-0.01	-2.48			-0.06	5.97

Notes

Sampled at 1230. Sunny 73 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 13:49:59

Project Information:		Pump Information:	
Operator Name	Taylor Goble	Pump Model/Type	Bladder Pump
Company Name	ACC	Tubing Type	Poly
Project Name	Pond 3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	59 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	HACH	Pump placement from TOC	54 ft

Well Information:		Pumping Information:	
Well ID	YGWA-5I	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6595111 L
Well Total Depth	58.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2 in
Depth to Water	21.71 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 25
Last 5	13:29:03	900.02	18.26	6.14	86.26	1.05	21.94	5.91	18.44
Last 5	13:34:03	1200.02	18.22	5.97	86.31	1.33	21.94	5.82	20.74
Last 5	13:39:03	1500.02	18.19	5.89	86.19	1.15	21.94	5.74	22.01
Last 5	13:44:03	1800.02	18.15	5.84	86.20	1.08	21.94	5.72	22.49
Last 5	13:49:03	2100.02	18.08	5.80	86.22	1.05	21.94	5.74	23.41
Variance 0			-0.03	-0.08	-0.12			-0.07	1.27
Variance 1			-0.04	-0.04	0.01			-0.02	0.48
Variance 2			-0.08	-0.04	0.02			0.02	0.92

Notes

Sampled at 1349. Sunny 75 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 10:21:01

Project Information:		Pump Information:	
Operator Name	Taylor Goble	Pump Model/Type	Bladder Pump
Company Name	ACC	Tubing Type	Poly
Project Name	Pond 3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	40 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	HACH	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	YGWA-17S	Final Pumping Rate	120 mL/min
Well diameter	2 in	Total System Volume	0.4761093 L
Well Total Depth	39.91 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2 in
Depth to Water	15.87 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 25
Last 5	09:58:16	300.15	19.28	7.42	82.49	2.37	16.04	3.94	117.75
Last 5	10:03:16	600.02	19.12	5.95	80.35	2.12	16.02	2.65	101.23
Last 5	10:08:16	900.02	19.15	5.65	79.21	1.56	16.02	2.03	91.56
Last 5	10:13:16	1200.02	19.15	5.61	80.09	1.08	16.02	2.03	79.11
Last 5	10:18:16	1500.02	19.19	5.56	81.21	0.88	16.02	2.03	69.99
Variance 0			0.02	-0.30	-1.14			-0.62	-9.68
Variance 1			0.00	-0.05	0.88			-0.00	-12.44
Variance 2			0.04	-0.04	1.12			-0.00	-9.12

Notes

Sampled at 1018. Sunny 69 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-26 12:29:44

Project Information:		Pump Information:	
Operator Name	Chris Parker	Pump Model/Type	Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	Poly
Project Name	Plant Yates - AP3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	80 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	466058		
Turbidity Make/Model	Hach 2100 Q	Pump placement from TOC	75 ft

Well Information:		Pumping Information:	
Well ID	YGWA-18I	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	1.257218 L
Well Total Depth	79.67 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3 in
Depth to Water	25.57 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	12:07:35	600.01	21.91	6.25	109.47	13.00	25.80	1.96	108.59
Last 5	12:12:35	900.01	19.56	6.04	108.69	8.76	25.80	3.10	124.34
Last 5	12:17:35	1200.00	19.12	6.04	109.17	6.03	25.80	3.23	123.56
Last 5	12:22:35	1499.99	19.06	6.03	108.92	4.54	25.80	3.21	123.15
Last 5	12:27:35	1799.98	18.84	6.04	108.94	3.75	25.80	3.20	120.95
Variance 0			-0.44	0.01	0.49			0.13	-0.78
Variance 1			-0.06	-0.01	-0.25			-0.01	-0.41
Variance 2			-0.22	0.01	0.02			-0.01	-2.20

Notes

Sampled at 12:30. Sunny 80s. DUP 2 here.

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-26 10:43:23

Project Information:		Pump Information:	
Operator Name	Chris Parker	Pump Model/Type	Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	Poly
Project Name	Plant Yates - AP3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	466058		
Turbidity Make/Model	Hach 2100 Q	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	YGWA-18S	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.8711092 L
Well Total Depth	39.86 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	14 in
Depth to Water	22.65 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	10:20:55	900.00	18.35	5.20	60.97	7.65	23.70	1.38	147.93
Last 5	10:25:55	1199.99	18.39	5.20	60.89	6.91	23.80	1.25	147.97
Last 5	10:30:55	1499.99	18.41	5.20	60.75	5.69	23.80	1.22	146.19
Last 5	10:35:55	1799.98	18.35	5.20	60.63	5.20	23.80	1.21	145.95
Last 5	10:40:55	2099.97	18.46	5.20	60.57	4.87	23.80	1.21	145.76
Variance 0			0.02	0.00	-0.14			-0.03	-1.79
Variance 1			-0.06	-0.00	-0.12			-0.02	-0.24
Variance 2			0.12	0.00	-0.06			0.00	-0.19

Notes

Sampled at 10:45. Sunny 80s. FB 1 here at 10:30 - gloves

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 13:28:28

Project Information:		Pump Information:	
Operator Name	Chris Parker	Pump Model/Type	Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	Poly
Project Name	Pond 3	Tubing Diameter	.17 in
Site Name	Plant Yates	Tubing Length	30 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	466058		
Turbidity Make/Model	Hach 2100 Q	Pump placement from TOC	25 ft

Well Information:		Pumping Information:	
Well ID	YGWA-20S	Final Pumping Rate	180 mL/min
Well diameter	2 in	Total System Volume	0.6189027 L
Well Total Depth	29.71 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	8 in
Depth to Water	13.04 ft	Total Volume Pumped	18 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	13:06:27	4499.92	56.75	5.96	32.34	4.81	13.70	1.94	357.27
Last 5	13:11:27	4799.91	60.08	5.96	31.07	4.65	13.70	2.27	442.28
Last 5	13:16:27	5099.90	61.91	5.96	30.14	4.27	13.70	3.13	496.04
Last 5	13:21:28	5400.90	62.46	5.96	30.29	3.91	13.70	3.27	545.87
Last 5	13:26:28	5700.89	62.03	5.96	30.32	3.77	13.70	3.16	591.58
Variance 0			1.84	-0.00	-0.93			0.86	53.76
Variance 1			0.55	0.00	0.16			0.14	49.83
Variance 2			-0.44	-0.01	0.02			-0.11	45.71

Notes

Sampled at 13:30. Sunny 70s

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 14:25:57

Project Information:		Pump Information:	
Operator Name	Chris Parker	Pump Model/Type	Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	Poly
Project Name	Pond 3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	80 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	466058		
Turbidity Make/Model	Hach 2100 Q	Pump placement from TOC	75 ft

Well Information:		Pumping Information:	
Well ID	YGWA-21I	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	1.257218 L
Well Total Depth	80.07 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	14:04:05	600.01	65.64	6.58	82.73	7.86	--	0.97	34.51
Last 5	14:09:05	900.01	65.99	6.57	77.03	6.69	--	0.66	44.24
Last 5	14:14:05	1200.00	65.28	6.56	74.32	5.25	--	0.36	56.05
Last 5	14:19:05	1499.99	66.00	6.56	73.41	3.67	--	0.27	64.06
Last 5	14:24:05	1799.98	67.27	6.57	72.42	2.55	--	0.28	62.35
Variance 0			-0.71	-0.01	-2.71			-0.29	11.81
Variance 1			0.71	-0.00	-0.91			-0.09	8.01
Variance 2			1.28	0.01	-0.99			0.01	-1.71

Notes

Sampled at 14:30. Sunny 80s. Transducer in well.

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 10:45:04

Project Information:		Pump Information:	
Operator Name	Chris Parker	Pump Model/Type	Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	Poly
Project Name	R6	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	68 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	466058		
Turbidity Make/Model	Hach 2100 Q	Pump placement from TOC	63 ft

Well Information:		Pumping Information:	
Well ID	YGWA-39	Final Pumping Rate	260 mL/min
Well diameter	2 in	Total System Volume	1.141386 L
Well Total Depth	68.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	7 in
Depth to Water	23.85 ft	Total Volume Pumped	10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	10:21:43	600.01	21.33	5.79	124.35	2.03	24.30	0.13	52.37
Last 5	10:26:43	900.06	21.09	5.81	121.57	2.21	24.30	0.08	51.88
Last 5	10:31:43	1200.01	21.23	5.81	113.84	1.90	24.40	0.08	53.51
Last 5	10:36:43	1499.99	19.81	5.81	113.14	1.63	24.40	0.10	54.62
Last 5	10:41:47	1803.98	20.33	5.81	109.37	1.52	24.40	0.10	56.02
Variance 0			0.13	0.00	-7.73			-0.00	1.63
Variance 1			-1.42	-0.00	-0.70			0.02	1.11
Variance 2			0.52	-0.00	-3.77			-0.00	1.40

Notes

Sampled at 10:45. Cloudy 60s. DUP 1 here.

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 09:46:56

Project Information:		Pump Information:	
Operator Name	Ryan Walker	Pump Model/Type	QED
Company Name	ACC	Tubing Type	poly
Project Name	R6	Tubing Diameter	.17 in
Site Name	Plant Yates	Tubing Length	48 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	43 ft

Well Information:		Pumping Information:	
Well ID	YGWA-40	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6042444 L
Well Total Depth	48.35 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	10 in
Depth to Water	28.00 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.3	+/- 10
Last 5	09:26:22	600.06	18.35	5.19	109.34	1.12	28.80	5.58	80.60
Last 5	09:31:22	900.01	18.30	5.22	109.97	1.47	28.80	5.59	79.19
Last 5	09:36:22	1200.00	18.30	5.21	110.48	1.48	28.80	5.60	79.77
Last 5	09:41:22	1500.00	18.30	5.19	110.50	1.22	28.80	5.60	82.67
Last 5	09:46:22	1799.99	18.25	5.22	110.63	1.28	28.80	5.61	79.58
Variance 0			0.00	-0.02	0.51			0.01	0.58
Variance 1			0.00	-0.02	0.02			0.00	2.90
Variance 2			-0.06	0.03	0.13			0.01	-3.09

Notes

Sampled at 09:46. Cloudy, 60’s.

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 17:56:27

Project Information:		Pump Information:	
Operator Name	Ryan Walker	Pump Model/Type	QED
Company Name	ACC	Tubing Type	poly
Project Name	Pond 3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	39 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	34 ft

Well Information:		Pumping Information:	
Well ID	YGWC-23S	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.7664565 L
Well Total Depth	39.18 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	ft	Total Volume Pumped	7.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.3	+/- 10
Last 5	17:35:55	1800.00	19.66	5.77	93.83	18.40	--	8.58	101.58
Last 5	17:40:55	2099.99	19.90	5.79	93.76	12.20	--	8.57	100.85
Last 5	17:45:55	2399.98	19.99	5.78	93.33	7.25	--	8.55	101.32
Last 5	17:50:55	2699.96	19.99	5.76	93.00	5.96	--	8.58	102.23
Last 5	17:55:55	2999.97	19.86	5.79	92.54	4.91	--	8.54	101.33
Variance 0			0.09	-0.01	-0.43			-0.02	0.46
Variance 1			0.00	-0.02	-0.33			0.04	0.91
Variance 2			-0.14	0.02	-0.46			-0.04	-0.90

Notes

Sampled at 17:56. Sunny, 70’s.

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 15:09:46

Project Information:		Pump Information:	
Operator Name	Ryan Walker	Pump Model/Type	QED
Company Name	ACC	Tubing Type	poly
Project Name	Pond 3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	57 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	52 ft

Well Information:		Pumping Information:	
Well ID	YGWC-24S	Final Pumping Rate	250 mL/min
Well diameter	2 in	Total System Volume	0.9402057 L
Well Total Depth	57.01 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	9 in
Depth to Water	29.03 ft	Total Volume Pumped	9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.3	+/- 10
Last 5	14:49:01	900.01	20.31	5.68	61.24	0.98	29.80	6.19	89.70
Last 5	14:54:01	1200.01	20.23	5.66	61.36	0.79	29.80	6.22	91.59
Last 5	14:59:01	1500.00	20.30	5.69	61.65	0.85	29.80	6.29	90.76
Last 5	15:04:01	1799.99	20.26	5.68	61.78	0.75	29.80	6.32	91.58
Last 5	15:09:01	2099.99	20.31	5.60	61.97	0.77	29.80	6.38	95.00
Variance 0			0.07	0.03	0.29			0.08	-0.82
Variance 1			-0.04	-0.01	0.13			0.02	0.82
Variance 2			0.05	-0.08	0.19			0.06	3.43

Notes

Sampled at 15:09. Sunny, 80’s.

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-26 10:56:32

Project Information:		Pump Information:	
Operator Name	A. James	Pump Model/Type	Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	poly
Project Name	Plant Yates - AP 3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	42 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Hach 2100 Q	Pump placement from TOC	37 ft

Well Information:		Pumping Information:	
Well ID	YGWA-14S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.8904147 L
Well Total Depth	38.73 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	10:25:13	600.03	20.96	3.71	1172.05	2.37	--	0.47	175.95
Last 5	10:30:13	900.02	21.17	3.72	1163.56	2.86	--	0.46	188.65
Last 5	10:35:13	1200.01	21.28	3.73	1161.76	2.19	--	0.44	199.23
Last 5	10:40:13	1500.00	21.31	3.74	1158.03	0.97	--	0.43	209.10
Last 5	10:45:13	1800.01	21.31	3.74	1161.06	1.27	--	0.41	219.12
Variance 0			0.11	0.01	-1.80			-0.03	10.58
Variance 1			0.02	0.01	-3.73			-0.00	9.87
Variance 2			0.01	0.00	3.03			-0.03	10.02

Notes

Sampled at 1050. Sunny, 80s. Transducer in well.

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 16:16:59

Project Information:		Pump Information:	
Operator Name	Ryan Walker	Pump Model/Type	QED
Company Name	ACC	Tubing Type	poly
Project Name	Pond 3	Tubing Diameter	.26 in
Site Name	Plant Yates	Tubing Length	60 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	55 ft

Well Information:		Pumping Information:	
Well ID	YGWC-36	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	1.016424 L
Well Total Depth	60.00 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	ft	Total Volume Pumped	5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.3	+/- 10
Last 5	15:56:09	900.01	21.10	5.59	247.73	1.87	--	1.00	120.62
Last 5	16:01:09	1200.01	20.93	5.56	242.38	1.53	--	0.79	120.92
Last 5	16:06:09	1500.00	20.92	5.57	240.74	1.68	--	0.74	119.21
Last 5	16:11:09	1799.99	20.80	5.56	241.06	1.88	--	0.74	119.23
Last 5	16:16:09	2099.99	20.75	5.56	241.36	1.80	--	0.73	118.40
Variance 0			-0.00	0.02	-1.64			-0.05	-1.72
Variance 1			-0.13	-0.01	0.31			-0.00	0.03
Variance 2			-0.04	-0.00	0.30			-0.00	-0.84

Notes

Sampled at 16:16. Sunny, 70’s. Transducer in well. Unable to get WLs.

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 11:17:16

Project Information:		Pump Information:	
Operator Name	Ryan Walker	Pump Model/Type	QED
Company Name	ACC	Tubing Type	poly
Project Name	R6	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	50 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	45 ft

Well Information:		Pumping Information:	
Well ID	YGWC-38	Final Pumping Rate	130 mL/min
Well diameter	2 in	Total System Volume	0.8726366 L
Well Total Depth	50.12 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.3	+/- 10
Last 5	10:56:16	600.02	18.24	4.79	1259.56	2.64	--	2.19	102.84
Last 5	11:01:16	900.01	18.26	4.79	1254.56	1.77	--	2.13	102.38
Last 5	11:06:16	1200.00	18.26	4.81	1258.27	1.54	--	2.10	102.31
Last 5	11:11:17	1501.00	18.30	4.80	1259.74	1.31	--	2.14	102.04
Last 5	11:16:17	1800.99	18.29	4.80	1260.45	1.22	--	2.09	101.81
Variance 0			-0.00	0.02	3.70			-0.02	-0.07
Variance 1			0.04	-0.01	1.47			0.04	-0.26
Variance 2			-0.00	0.00	0.71			-0.06	-0.24

Notes

Sampled at 11:16. Cloudy, 70's. Transducer in well. Unable to get WL readings. FB-1 here.

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 14:03:11

Project Information:		Pump Information:	
Operator Name	Ryan Walker	Pump Model/Type	QED
Company Name	ACC	Tubing Type	poly
Project Name	R6	Tubing Diameter	.17 in
Site Name	Plant Yates	Tubing Length	67 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	62 ft

Well Information:		Pumping Information:	
Well ID	YGWC-41	Final Pumping Rate	140 mL/min
Well diameter	2 in	Total System Volume	0.6890493 L
Well Total Depth	67.70 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	9 in
Depth to Water	28.87 ft	Total Volume Pumped	14.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.3	+/- 10
Last 5	13:42:32	3300.97	18.81	4.86	583.69	0.96	29.60	4.47	92.36
Last 5	13:47:32	3600.96	18.79	4.86	583.30	1.01	29.60	4.61	92.48
Last 5	13:52:32	3900.95	18.85	4.86	583.50	0.86	29.60	4.71	92.43
Last 5	13:57:32	4200.95	18.80	4.86	581.80	1.22	29.60	4.80	92.53
Last 5	14:02:32	4500.94	18.79	4.86	578.39	1.03	29.60	4.94	92.74
Variance 0			0.05	0.00	0.20			0.10	-0.05
Variance 1			-0.05	-0.00	-1.70			0.09	0.10
Variance 2			-0.00	-0.00	-3.41			0.14	0.21

Notes

Sampled at 14:02. Cloudy, 80’s.

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 13:56:55

Project Information:		Pump Information:	
Operator Name	Chris Parker	Pump Model/Type	Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	Poly
Project Name	R6	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	60 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	466058		
Turbidity Make/Model	Hach 2100 Q	Pump placement from TOC	55 ft

Well Information:		Pumping Information:	
Well ID	YGWC-42	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	1.064164 L
Well Total Depth	60.0 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	29 in
Depth to Water	30.0 ft	Total Volume Pumped	9.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	13:33:18	2399.97	19.85	5.51	1269.37	3.81	32.30	1.27	116.53
Last 5	13:38:18	2699.96	18.73	5.50	1307.29	3.72	32.30	1.39	115.74
Last 5	13:43:18	2999.96	20.92	5.50	1242.56	3.67	32.40	1.29	115.40
Last 5	13:48:18	3299.94	21.55	5.50	1246.58	3.59	32.40	1.34	114.49
Last 5	13:53:18	3599.93	19.84	5.50	1293.22	3.38	32.40	1.44	113.87
Variance 0			2.19	-0.00	-64.73			-0.11	-0.34
Variance 1			0.63	-0.00	4.03			0.05	-0.90
Variance 2			-1.71	-0.00	46.64			0.10	-0.63

Notes

Sampled at 13:55. Cloudy 70s. EB 1 here at 13:00 - gloves

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 12:11:24

Project Information:		Pump Information:	
Operator Name	Chris Parker	Pump Model/Type	Bladder Pump
Company Name	Atlantic Coast Consulting	Tubing Type	Poly
Project Name	R6	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	80 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	466058		
Turbidity Make/Model	Hach 2100 Q	Pump placement from TOC	75 ft

Well Information:		Pumping Information:	
Well ID	YGWC-43	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	1.257218 L
Well Total Depth	80.00 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2 in
Depth to Water	17.18 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	11:46:57	300.02	20.05	6.18	431.04	5.84	17.20	0.63	12.03
Last 5	11:51:57	600.01	20.82	5.74	555.54	5.02	17.30	0.32	47.44
Last 5	11:56:57	900.00	19.96	5.76	589.69	4.38	17.30	0.15	47.52
Last 5	12:01:57	1200.00	20.71	5.77	588.23	3.40	17.40	0.07	46.02
Last 5	12:06:57	1499.99	21.05	5.78	596.18	3.12	17.40	0.06	44.91
Variance 0			-0.85	0.02	34.15			-0.17	0.07
Variance 1			0.75	0.01	-1.46			-0.09	-1.49
Variance 2			0.34	0.01	7.95			-0.00	-1.11

Notes

Sampled at 12:10. Cloudy 70s

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-10 16:36:55

Project Information:		Pump Information:	
Operator Name	Taylor Goble	Pump Model/Type	Bladder Pump
Company Name	ACC	Tubing Type	Poly
Project Name	Pond 3	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	79 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	HACH	Pump placement from TOC	74 ft

Well Information:		Pumping Information:	
Well ID	YGWC-49	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.8525658 L
Well Total Depth	79.00 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	10 in
Depth to Water	31.90 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 25
Last 5	16:15:20	900.02	21.73	5.78	242.81	0.77	32.44	3.14	31.00
Last 5	16:20:20	1200.02	21.73	5.70	243.13	0.63	32.50	3.00	30.79
Last 5	16:25:20	1500.02	21.57	5.74	242.38	0.58	32.62	2.79	27.26
Last 5	16:30:20	1800.02	21.60	5.68	243.12	0.61	32.69	2.77	27.03
Last 5	16:35:21	2100.66	21.46	5.72	242.91	0.54	32.77	2.63	23.72
Variance 0			-0.16	0.04	-0.75			-0.21	-3.53
Variance 1			0.03	-0.06	0.74			-0.02	-0.22
Variance 2			-0.14	0.04	-0.21			-0.14	-3.32

Notes

Sampled at 1635. Sunny 82 degrees

Grab Samples